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China Report

SCIENCE AND TECHNOLOGY

No. 103

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CHINA REPORT

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PEOPLE'S REPUBLIC OF CHINA

ABSTRACTS

NATIONAL DEVELOPMENTS

FANG YI SPEAKS AT CAS SCIENTIFIC COUNCIL MEETING

OW300658 Beijing Domestic Service in Mandarin 0900 GMT 29 May 81

[Excerpts of the work report delivered by Fang Yi at the fourth session of the Scientific Council of the Chinese Academy of Sciences on 11 May 1981]

[Text] The report says: In the past 4 years and more since the smashing of the gang of four, the Chinese Academy of Sciences [CAS], working under the leadership of the party Central Committee and the State Council, has strived to implement the correct political, ideological and organizational lines of the party Central Committee. It has radically changed the situation of disorder and solved many questions left over from an earlier period. It has restored order in scientific work and made progress in all fields.

1. It has brought order out of chaos, implemented the party's policies and shifted the focus of the academy's work onto the path of scientific research. After the national science conference, especially since the 3d session of the 11th CCP Central Committee, great efforts have been made to shift the focus of the academy's work to scientific research and to put progress in scientific research ahead of production and construction. Meanwhile, acting on Comrade Deng Xiaoping's pithy analysis of Chinese intellectuals as part of the working class, we have firmly relied on our own scientists and technicians. We have restored the functions and powers to various institute and office directors, restored the academic committees of various institutes and restored technical job titles. We have promoted a large number of outstanding middle-aged and young scientific and technical cadres. We have reiterated the necessity to devote at least 5/6 of our working hours to research. We have restored enrollment of graduate students, reformed political work organizations and increased the proportion of scientists and technicians in the composition of the party committees of scientific research organizations. In the last 2 years, we have emphatically studied the guiding policy of the academy and questions concerning the strengthening of leadership over academic work.

2. We have restored and consolidated scientific research organizations and made initial reforms. In 1965, before the great cultural revolution, the Chinese Academy of Sciences for the first time became a comprehensive research center of natural sciences with all necessary branches of learning. It suffered severe damage during the 10 years of disorder. In the past 4 years, the academy recovered, restored and built a number of research institutes and branch institutes.

The academy now boasts 117 research institutions with a total work force of more than 75,000, of which more than 36,000 are research technicians and 2,000 are higher research technicians. We have initially substantiated the technological system, which is indispensable to scientific research. We have drawn in more personnel who are specialized in designing, production, maintenance and repair of scientific instruments and equipment. We have built and improved some public laboratories and technical service organizations. We have equipped laboratories with a number of new instruments we have made. We have completed a number of laboratory buildings and put a number of large equipment to laboratory use.

3. We have made steady progress in scientific research and achieved a number of results which meet certain academic standards and are of practical value. We have also stepped up the training of cadres. We formulated an 8-year plan in 1977. The academy scored about 500 important achievements 1977-80. In order to expand academic exchanges, we have actively organized and participated in various academic activities at home and stepped up the publication of books and journals. We presently publish 400 kinds of scientific and technological books and some 70 scientific and technological periodicals annually. For the purpose of training cadres, we are determined to run well the Chinese University of Sciences and Technology and its graduate schools. In recent years, the academy has taken in more than 1,800 graduate students. Having received on-the-job training and participated in various study classes, present scientists and technicians, as well as college graduates in recent years, have improved their understanding of basic theories, experimental techniques and foreign language skills. We have made it possible for more than 1,000 people to attend schools, pursue advanced studies or participate in research work in foreign countries. We have set up colleges for cadres to pursue advanced studies and organized the cadres to gain scientific and management knowledge in order to improve the management ability of present party and government cadres.

4. We have strengthened international academic exchanges and developed scientific cooperation with foreign countries. The CAS has signed agreements and memoranda on scientific and technological cooperation and exchanges and established cooperative relationships with the scientific organizations of many countries. There has been a fairly big increase in the number of personnel sent abroad and invited to China. Several international academic symposiums have been held in China in addition to the participation of many Chinese scientists and technicians in international academic conferences abroad.

The report says: As an academic institution, the CAS should take into account the unique features of academic institutions when it adopts the system and methods of leadership. The CAS departments set up in 1955 were specifically meant to strengthen academic leadership by relying on scientists. Since their establishment, the CAS departments have done much work and played their roles well. After 1957, academic leadership was weakened somewhat under the influence of "leftist" mistakes. During the decade of turmoil, CAS department activities were banned. All this hampered the CAS from functioning normally. In the spring of 1979, with the consent of the party Central Committee and the State Council, we began to restore and rebuild the CAS departments and appoint new members to them. Thanks to the support of all departments and localities and the earnest examination and democratic elections by the original CAS department members, 283 new CAS department members have been appointed. Together with the original members, the total CAS department

membership now stands at 400. Formerly CAS departments were primarily consultative bodies. Now the scientific council is the highest policymaking organ of the CAS. This is an important change.

Recently, the central authorities clearly reaffirmed that the CAS is the nation's highest academic institution in natural science and a comprehensive research center. The CAS should do a good job in building the research institutes under its jurisdiction and, through the higher-level research work of these institutes, serve the nation's four modernizations program. At the same time, the CAS has an important responsibility to develop science and technology in the whole country.

The report offers some opinions regarding the future work of the CAS departments.

The report says: Science and technology are productive forces. Scientific research should advance ahead of production and construction. Economically backward countries like China are especially in need of scientific and technical forces to improve the nation's outlook.

The CAS departments and their members should play positive roles in integrating science and technology with social and economic development in the following aspects:

First, it is necessary to make our scientific research yield more fruitful results and make greater contributions to the nation's economic and national defense construction. Second, the party Central Committee and the State Council want the CAS to play the role of staff to the party and the state in scientific and technological matters and to offer valuable opinions or suggestions on important matters related to the four modernizations program. Third, it is hoped that in integrating science and technology with society and the economy, CAS department members will publicize the important role of science and technology among the large numbers of cadres and masses, publicize the significance of propagating scientific research findings and disseminate scientific and technical knowledge so that everyone will study, make use of and support science and technology. Science and technology should serve the nation's economic construction.

The central authorities have clearly laid out the principle for operating the CAS--"placing particular emphasis on the basics and on raising the standards and serving the national economy and national defense construction"--and have pointed out that the CAS should strive to achieve higher academic standards and better meet the needs of the nation's economic and national defense construction. It is necessary to make scientific research match China's present situation and modern scientific developments. At the same time, it is necessary to fully consider the needs of future development. According to this principle, the CAS is mainly responsible for doing research in pure science and some branches of technical science. It is necessary to quickly train outstanding researchers in pure science and gradually increase the ratio of basic research by gradually readjusting research projects, actively training postgraduates and sending personnel abroad for further studies. It is necessary to raise the standards of research in practical application and devote greater efforts to applying the findings from basic research and exploring new domains. It is necessary to take our own capabilities into account when engaging in the work of expansion, which constitutes a large proportion of our present work.

In reporting on his 6-month tour of the United States, Comrade Hua Luogeng said that application cannot be successful without a broad and strong theoretical foundation. Summing up the practical scientific experience of the biochemistry institute in 30 years, Comrade Cao Tianqin also vividly explained the relationship between fundamentals and application. He maintained that research in pure science can facilitate production and that research in practical application can also generate new theories. Some research in pure science may yield practical results if we pay attention to relating it to reality. Research in practical application is linked to production and to raising scientific standards. It may also turn up subjects for basic research.

The CAS should also pay great attention to contributing its share to the nation's economic construction. We have also done a great deal of work in this aspect. However, we have dampened the enthusiasm of some scientists and technicians because of drawbacks in our system and work and because the paths were not cleared for publicizing scientific achievements. In the wake of national economic readjustment and economic structual reform, economic departments are feeling an increasing need for science and technology. This opens broader prospects for science and technology to play their part in production. Scientific research, including the work of pure science research units and many basic research projects, can also promote economic construction. We should pay attention to the ideological aspects of this matter, select the major fields of application and coordinate our efforts.

Since they hail from various departments and localities, CAS department members are more qualified to promote contacts and cooperation among the various departments. In future, CAS departments will examine the direction, tasks and plans of research institutes under the CAS which fall within the scopes of their respective disciplines. They will examine important projects and review the work of research institutes. They should try to prevent needless duplication of research projects among the various departments and institutes of higher learning. This will facilitate mutual understanding.

The report says: Our society as a whole works to achieve a civilization with socialist spirit. Scientists and technicians are builders of material as well as spiritual civilization. As an academic institution, the CAS is charged with the basic task of fostering a fine study style. It is necessary to foster among scientists and technicians a fine study style--of emancipating the mind, seeking truth from facts, daring to make explorations and setting rigorous and tough demands. Our party and government cadres should avoid making conclusive statements on right and wrong in specific academic issues. They should also not regard any leaders' instructions as a yardstick for making academic appraisals. Academic issues can be appraised only by academic circles.

Scientific research is a highly creative and extremely arduous mental labor. A major scientific breakthrough or an embryonic scientific assumption can be made only after scientists have devoted successive years or decades or even their entire lives to research. Sometimes the efforts of several generations are needed to accomplish it. Leading comrades of research institutes of the CAS should fully understand and pay attention to the unique features of scientific research, act according to objective laws and prevent scientific research from being interfered with or disrupted. We hope that the old and middle-aged scientists will help young scientists and technicians foster an indomitable spirit so that they will not rest content with having a smattering knowledge of a subject, retreat at the first sign of hardship or look up against long years of experiments, surveys, observations and investigations.

An extremely important matter now is to fully bring out the potential and functions of middle-aged and young scientists and technicians. Scientists who are relatively advanced in age have many strong points, but they lack the stamina and have limited time to continue their work, a fact dictated by the laws of nature. We should enable them to devote this limited time to discovering, selecting, promoting and training talented people and to use their experience to make up for their inadequacies. We should let them shoulder more important tasks and give them more chance to demonstrate their talents in academic leadership, academic activities, international exchanges and organizational and administrative work. The leadership should show warm concern for their difficulties and problems and solve them step by step. We hope that the older scientists will display tireless zeal in teaching people and continue to guide the middle-aged and young scientists and technicians in academic thinking and methods of academic pursuit.

An important characteristic of science and technology is the constant and endless breakthroughs in the attained levels. Changes occur daily in modern scientific and technological development. Therefore, old, middle-aged and young scientists should constantly study and improve themselves. They should familiarize themselves with the latest developments in science and technology throughout the world, study new problems, accept new ideas, explore new domains, furnish new results and make fresh contributions.

The historical lesson obtained from the revolution and construction in China shows that a correct CCP leadership is indispensable. Scientific and technological development since the founding of new China also shows that a correct CCP leadership is indispensable. Our party has put forth the principles in doing cadres' work--to have revoltuionary, more educated, professional and younger cadres. Cadres doing political, administrative or logistic work in scientific research institutions should set higher demands in order to be more revolutionary. They should constantly raise their ideological and theoretical levels and improve their understanding of the policies by studying political theories and party policies and constantly summing up their work experience. They should uphold the four basic principles and foster the lofty ideas of serving scientific research and scientists and technicians, They should pay attention to studying new situations and problems, improving their methods of work, gaining new experience and constantly raising the level of ideological and political work and other administrative work. They should unite all scientists and technicians and help them make constant progress in poltiical awareness and allay livelihood worries that distract them from their work. Party member-cadres should all the more observe the guiding principles for inner-party life and play an exemplary and vanguard role in all work.

CSO: 4008/358

FUTURE CHINESE NUCLEAR POWER STATIONS PREVIEWED

Shanghai DIANSHIJIE [ELECTRIC WORLD] in Chinese No 3, 1981 p 1

[Article by Jia Hongbin [0328 7703 2430], East China Electric Power Design Institute: "Prospects for Our Country's Nuclear Power Station Development in the 1980's"]

[Text] Energy Utilization and Conservation

The energy source of the electric power stations which our country has built in the past have been primarily coal or water power (in recent years there have been a few oil-fired stations, but these do not constitute a trend). Most of the coal is produced in the north and northwest, and most of the water power is in the south and southwest, but the industrially developed coastal region lacks energy resources, creating a situation in which "northern coal must be sent to the south." A 300,000 kilowatt coal-fired power unit consumes about 27 million tons of coal a year. But a 900,000 kilowatt nuclear power unit requires replacement of only part of its fuel, a mere 24 tons, each year. In addition, coal and oil are important chemical engineering raw materials which are critical for the national economy and the people's livelihood, and it is a shame to use them as fuels. Accordingly, developing nuclear power stations is a possible approach.

The nuclear power stations which many countries have already built are merely the first step in utilization of atomic energy. They use only the heat energy produced by fission of uranium 235 to produce electricity. This method of using nuclear energy has low efficiency: 1 ton of uranium is equivalent to only 300,000 tons of coal. Accordingly it is necessary to proceed to the second step in the utilization of nuclear energy, not only using uranium 235 to produce heat energy, but also using its radioactive nature to convert thorium into a new energy source which does not exist in nature, plutonium 239. By this conversion it is possible to release the energy in thorium resources, so that 1 ton of uranium becomes equivalent to a million tons of coal. Some countries have already made this second step. Our country is relatively well endowed with thorium ores, and if we develop these "thorium-eating breeder reactors" we can advance our country's utilization of nuclear energy to a new stage. The third stage in nuclear energy utilization is the controlled thermonuclear reaction, in which the heat produced by fusion reaction is used to generate power; in that stage the energy situation will undergo a fundamental change.

Future Prospects for This Country's Nuclear Power Stations

While building our own nuclear power stations, we can also import some equipment from abroad. For example, pressurized-water reactors are a type of light water reactor, and also the type of reactor most extensively used worldwide. But they still belong to the first step in nuclear power utilization. The power generation costs for a million-kilowatt level light water reactor power station are only a third those of a fossil-fired plant of the same capacity, while the investment cost is only 1.5 times higher than the fossil-fired plant; in addition, there is already considerable experience with the operation of such reactors, and the accident rate and fuel replacement time are steadily improving. The greatest advantage of this reactor type is that it makes it possible to accumulate experience in producing and extracting uranium 239, thus laying the groundwork for development of breeder reactors.

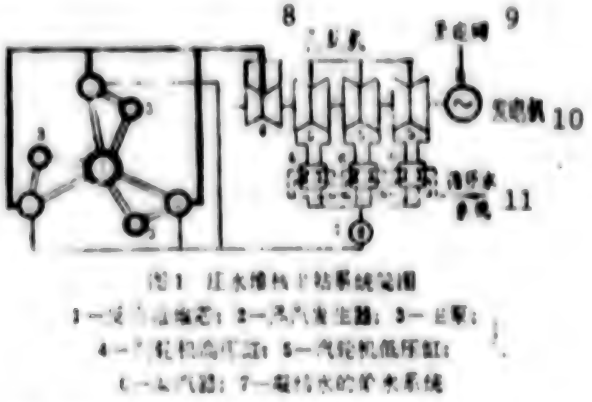

Figure 1. System diagram of an electric power station

Key:

1. Reactor core
2. Steam generator
3. Main pump
4. High-pressure element of steam turbine
5. Low-pressure elements of steam turbine
6. Condenser
7. Water supply from condensers
8. Steam turbines
9. To electrical grid
10. Generator
11. Water circulation system

The reactors of this type of power station have three closed-cycle cooling circuits, as shown in Figure 1. Each circuit has a steam generator and main pump. Each circuit is filled with boron-containing water. Driven by the main pump, this water circulates in a closed cycle through the reactor core, the steam generator and the pump. The water carries heat from the reactor core to the steam generator, where it transfers it to the condenser water, causing it to volatilize as steam and drive steam turbine electric generators. The fuel in the reactor core is low-concentration uranium. There is a total of 72.5 tons of it, which is capable of

generating 2.775 million kilowatts of thermal power. Only a third of the fuel has to be exchanged each year, and only one exchange operation a year is needed. The three steam generators provide 5,446.8 tons of steam an hour to the steam turbines at a pressure of 57.7 bar (1 bar = 0.986923 standard atmospheres) and a temperature of 271° C with a moisture content of 0.25 percent. The steam turbine consists of one high pressure element and three low pressure elements and is of the double-flow impulse type. The generator which the turbines drive can produce 966,000 kilowatts of electric power. At the same time, the steam turbine also requires about 150,000 tons of circulating water an hour to cool its condensers; because the water consumption is high it is reasonable to locate the stations on the coast. Figure 2 shows the layout of an ordinary nuclear power station.

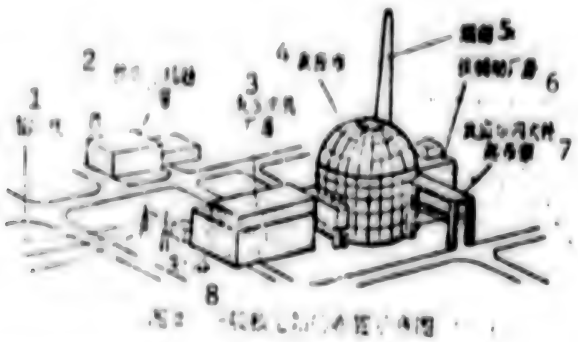

Figure 2. Layout of an ordinary nuclear power station.

Key:

1. Electric transmission line
2. Generating plant auxiliary building
3. Steam turbine generator plant
4. Reactor
5. Stack
6. Reactor auxiliary building
7. Crane for handling large reactor components
8. Transformer

New Topics in the Management of Scientific Research and Technology

The higher the power capacity of nuclear power stations, the lower the investment and operating costs. The current worldwide trend is to construct power units with capacities of a million kilowatts or more. These large-capacity stations present our country with new topics in power engineering, equipment production, management of the electrical industry and of technology, and the like.

8480
CSO: 4008/327

BRIEFS

HIGH-CALIBER RIG--Hangzhou, 20 May (XINHUA)--China's first high-caliber rig for building wharfs with tube caisson foundation in deep-water is now operating in the East China Sea. The rig was developed by the engineering and technical personnel of a certain PLA naval unit. It is largely controlled by electronics and can operate in winds gusting to force 6 and in other difficult conditions. [Beijing XINHUA Domestic Service in Chinese 0019 GMT 20 May 81 OW]

CSO: 4008/354

PRESENT STATUS OF PSYCHOSOMATIC MEDICINE IN CHINA OUTLINED

Beijing ZIRAN BIANZHENGFA TONGXUN [JOURNAL OF DIALECTICS OF NATURE] in Chinese No 6, 1980 pp 49-51

[Article by Wu Zhengyi [0124 2973 6146], Liu Chengjie [0491 2052 2638] and Wang Xiaodao [3769 2400 1418]]

[Excerpts] At present, research studies in psychosomatic medicine are no longer confined to the effects of emotional factors or sociopsychological tension stimulants on the psychological process of the human body. More profound and detailed studies are now being carried out dividing the various psychological, social, and physical factors into many subsystems. For example, studies of interactions between genetic characteristics, physical, psychological, and personality characteristics, and the social-cultural background have been conducted to reveal the special psychological state before the appearance of the various physical diseases, to study the behavior pattern before the appearnce of the various bodily illnesses, to investigate the function of the form of habitual response (the model type) shaped by childhood learning experiences or external stimulations on the bodily diseases occurring at a later date, to examine the mechanism of the brain medium, etc. Contemporary psychosomatic medicine undertakes comprehensive observations of an overall nature with regard to factors of both psychological and physical matters. It attempts to find answers to questions such as the following:

(1) Why do people often react to certain special social environment and events of living with certain special psychological or physiological change?

(2) Why is it that certain conditional changes of the sociocultural background and interpersonal relationship are felt as tension stimulation in a given time of life of certain people but not of some other people?

(3) What types of sociopsychological factors foretell the possibility of an individual to become sick at what time and of what disease?

(4) What are the personality traits of an individual who is easily sick or who complains of various types of physical symptoms?

(5) What is the pathway and mechanism through which the stimulating signals of the inner or outer environments of the body cause a person to be easily sick? How does the human body transform mental stimulations into physiological changes which lead to a disease?

Major theories of contemporary psychosomatic medicine claim that human signal activity realized by the cerebral mechanism affects all bodily processes. The signal activity of man is carried out mainly by the cerebral structure and function. Various conscious mental activities form a set of factors influencing the inner equilibrium, the physical health, and adjustments. The signal activity of man is realized mainly by cerebral structure and function while the cerebral function is also directly influenced by stimulations of the external and the body's internal environment. The so-called signal-processing process is the reaction of the body toward the three aspects of the external environment, the inside of the body, and the signal activity itself, while at the same time the largest quantity of signals belong to the social environment and events and they form the most important source of signals acting on man. Man, consciously or unconsciously, gives subjective evaluation to signals. This is the condition of stirring emotions, and inversely, there are some physiological and biochemical changes to induce given recognition and behavior activities, all of which are related to the conditin of health of the body. Impediments of physical organs and anomalies of mental activities are often very closely related. Serious physical impediments often leave a scar on the mind while serious mental anomalies will also leave the same kind of scar on the body. In other words, pathological changes of physical organs may often be expressions of certain psychological anomaly and this is the basic starting point of contemporary theory in psychosomatic medicine. To reveal the profound relationship between the psycho-social factor and the physical factor of the body and the function of these factors on human health and disease is the major subject matter of contemporary research of psychosomatic medicine.

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CSO: 4008/313

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS

'RADIO BEIJING' INTERVIEWS ACADEMY PRESIDENT LU JIAXI

OW201808 Beijing Domestic Service in Mandarin 1200 GMT 19 May 81

[Text] On the morning of 19 May, all the members attending the fourth session of the Scientific Council of the Chinese Academy of Sciences, in accordance with the stipulations on leading organs in the constitution of the Chinese Academy of Sciences (for trial implementation) adopted on 18 May, elected by secret ballot the presidium of the Chinese Academy of Sciences. The presidium elected its executive chairmen and president and vice presidents of the academy. Our well-known chemist, Lu Jiaxi, was elected president of the Chinese Academy of Sciences.

The presidium of the academy is the policymaking organ, if the Scientific Council is not in session. The session elected 29 members to form the presidium. They are (in the order of the number of strokes in their surnames): Yu Guangyuan, Wang Daheng, Wang Ganchang, Ye Duzheng, Feng Depei, Lu Jiaxi, Hua Luogeng, Song Ping, Yan Dongshen, Yan Jici, Li Chang, Li Xun, Wu Zhonghua, Wu Nengyi, Wu Heng, Yu Wen, Zhou Peiyuan, Zhang Wenyou, Zhang Guangdou, Hu Keshi, Hou Xianglin, Qin Lisheng, Qian Sanqiang, Qian Xuesen, Tu Guangchi, Gao Yi, Tang Auqing, Huang Jiasi and Xie Xide (female).

On the morning of 19 May, the presidium of the academy held its first meeting and elected Yan Jici, Li Chang and Wu Zhonghua as executive chairmen of the presidium, Lu Jiaxi as president of the Chinese Academy of Sciences, and Qian Sanqiang, Hu Keshi, Feng Depei, Li Xun, Yan Dongsheng and Ye Duzheng as vice presidents of the academy.

Lu Jiaxi is a well-known chemist in our country and director of the Institute of Substantial Structures of the Chinese Academy of Sciences. He is 66 years old. His ancestral home was in Taiwan Province. In 1939, he went to study at the California Institute of Technology in California, the United states. He returned to China in 1945. He served successively as director of the Chemistry Department, assistant academic dean, director of the graduate school and assistant to the president, of Xiamen University. In 1960, he was appointed vice president of Fujian University.

He was interviewed by this station's reporter and invited to say something on his election as president of the academy.

He said: [begin recording] The party Central Committee decided to have a scientist to serve as president of the academy. The party and the people have placed me in this important leading position. I fear that I am not competent enough to undertake this important leading job. Of course, every Chinese scientist cannot but feel that he has a share of responsibility to develop science and revitalize China. From now on, I am determined to rely on the party's leadership and the support of the scientific circles in Taiwan Province and Chinese scientists living abroad, strive to implement the academy's principle of putting the emphasis on basic science and on raising standards and serving the national economy and national defense construction, act according to the laws of science, do solid work persistently, academically encourage a hundred schools of thought to contend, [words indistinct] promote academic democracy, further strengthen academic interchanges with scientific circles in foreign countries, strive to develop science and revitalize China and dedicate my humble efforts to accelerating our country's four modernizations and enabling our country to rank among the world's advanced nations at an early date. [end recording]

CSO: 4008/353

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS

'BEIJING RADIO' ON SCIENTIFIC LEADERSHIP

OW201107 Beijing Domestic Service in Mandarin 1200 GMT 19 May 81

[Station commentary: "Rely on Scientists To Improve the Party's Leadership Over Scientific Undertakings"]

[Text] The fourth meeting of the Scientific Council of the Chinese Academy of Sciences (CAS) is in session in Beijing. Outstanding representatives of scientists from the whole country are discussing CAS work. The meeting passed the provisional CAS charter on 18 May and elected members of its presidium on 19 May. The presidium has elected the CAS president and vice presidents. This signals the grand unity of Chinese scientists and the prospering of scientific undertakings in our country.

All scientists are united in promoting our scientific development and revitalizing China--this is the call of the times, the aspiration of the people and the tremendous historical mission of scientific circles. We wish full success to the fourth meeting of the CAS Scientific Council.

Economic and social development is closely linked with scientific and technological development. To build a strong socialist country, it is necessary to rely on science and technology, on scientists who possess a variety of special knowledge and on all scientific workers. Our scientists and large number of scientific workers have the tradition of patriotism, diligence in pursuing study and hard work. For many years, they have achieved much through painstaking study and selfless work under difficult conditions and made contributions to our modernization campaign.

However, as many people failed to fully understand the role of science and technology and as left ideas and practices interfered with practical scientific work, the role of scientists and scientific workers did not receive the attention it deserved. We have suffered enough in the past in ignoring science and technology. Without changing this situation, it will be impossible for us to succeed in socialist modernization.

To bring into full play the role of scientists and fully rely on them to successfully run scientific undertakings, the fourth CAS Scientific Council meeting introduced a reform to the CAS' leadership system, changing the system of appointing members of the Scientific Council to the system of election. The 283 additional members of the Scientific Council attending this meeting were all democratically elected by the CAS. The status of the Scientific Council meeting also has been changed from a consultative body to the supreme decision-making body of the CAS.

The Scientific Council meeting is to determine CAS development orientation, ratify research programs, decide on major issues and elect the presidium, which in turn elects the CAS president and vice presidents.

Now a scientist has become the CAS president. This is a major reform of the CAS leadership system. It is a concrete manifestation of, and an organizational guarantee for, reliance on scientists to improve the party's leadership over China's scientific undertakings. Replacing the past system of largely administrative leadership, the new system is conducive to doing things according to scientific laws. It is our belief that with China's outstanding scientific representatives taking part in CAS leadership and policy making, the CAS will be run still better, effectively promoting China's scientific development and making still greater contributions to the state.

The significant CAS reform aimed at relying on scientists to lead China's academic development is a first in our country. We should foster a social atmosphere of respecting science and scientists and attaching importance to, and making use of, scientists' ability. All departments and industries should give full scope to the consultative and advisory role of scientific and technical workers. Moral and talented people with scientific and technological knowledge should be placed in the leading body or councils of specialists and advisors should be established to capitalize on science and technology promoting social and economic development.

CSO: 4008/353

'WEN WEI PO': HU YAOBANG MEETS SCIENTISTS

HK210905 Hong Kong WEN WEI PO in Chinese 21 May 81 p 2

[ZHONGGUO XINWAN SHE reporter's feature: "Hu Yaobang Meets Scientists"]

[Text] With a red invitation card issued by the General Office of the CCP Central Committee in hand, scientists attending the fourth session of the Scientific Council of the Chinese Academy of Sciences came this morning to a symposium at the Huairen Hall in Zhongnanhai, which was personally presided over by Hu Yaobang, general secretary of the CCP Central Committee.

In front of the curtain in Huairen Hall were displayed fresh flowers and evergreen pinetrees. This solemn rectangular hall is a place where the CCP Central Committee and the State Council hold important meetings. Today, mount taishans and big dippers of the Chinese scientific circles came here as guests of the CCP Central Committee's secretariat to meet cordially with leading members of the secretariat.

At 1000 hours leading members of the secretariat and chief responsible members of the Chinese Academy of Sciences began to take their seats while chatting with each other. On the rostrum were seated from left to right Yao Yilin, Song Renqiong, Wu Zhonghua, Fang Yi, Yan Jici, Hu Yaobang, Lu Jiaxi, Wan Li, Li Chang, Gu Mu and Peng Chong. Of the 12 members of the Central Committee's Secretariat, only 5 were not present at the symposium because they had something else to attend to.

Hu Yaobang, general secretary of the CCP Central Committee, delivered a warm, sincere and rather important speech at the symposium. He warmly congratulated the participants on the complete success of the session and hoped that the scientists would go deep into the realities of life, solve important problems in the national economy and assume the attitude of masters in their work. He called on them to break through brambles and thorns and scale the summit of science with full confidence. His speech won repeated applause which lasted for some time.

Wan Li, Song Renqiong and Yao Yilin also addressed the symposium. They encouraged the scientists to contribute their intelligence and wisdom to the four modernizations.

Yan Jici, acting chairman of the presidium of the Chinese Academy of Sciences, spoke at the symposium. He said that the speeches of leaders of the CCP Central Committee's Secretariat were unforgettable and a great encouragement to scientific workers. He asked everybody to grasp seriously the essence of the speeches and implement them in practical work.

Wu Zhonghua, acting chairman of the presidium of the Chinese Academy of Sciences, gave a lecture on "Solution to the Energy Problem Viewed from Modern Science and Technology" to leaders of the Central Committee's Secretariat and the State Council in Zhonghanhai last year. He was deeply moved by how leaders of the Central Committee showed concern for scientists and how they attached importance to the cause of science. Wu Zhonghua said to reporters of ZHONGGUO XINWEN SHE: The speech made by General Secretary Hu Yaobang has struck chords in our hearts. On the march to realize the four modernizations, we scientific workers should strive to become heroes shouldering the historic mission.

Chen Zongji, an expert in rock and soil dynamics and a returned Overseas Chinese, worked assiduously in solving crucial technical problems of the large-scale projects of the Ge Zhou Dam and the Sanman Gorge. At the end of last year, when leaders of the Central Committee discussed problems of the Ge Zhou Dam project, they listened to his opinions and those of Professor Zhang Guangdou. Today, after listening to the inspiring speech made by General Secretary Hu Yaobang, he excitedly told the reporters: "I would like to repeat that I have said: there is ample room for our abilities in our motherland!"

Today, in the forbidden city, the sun is shining bright and the breeze is blowing softly, and in Zhongnanhai, the lake reflects the beautiful blue sky. Before the symposium, the scientists paid a visit to the former residence of the late chairman Mao Zedong and went to see scenic spots such as Yingtai, Yingxun Pavilion, and so on, with great interest and enthusiasm.

CSO: 4008/353

SUPPLEMENTAL AND ORIGINAL NAME LISTS FOR ACADEMIC DEPARTMENTS OF THE CHINESE ACADEMY OF SCIENCES

Hong Kong ZHONGGUO XINWEN in Chinese 31 Mar 81 pp 2-5

[Article: "Supplementary Name List for Chinese Academy of Sciences Academic Department Committee Members"]

[Text] Departments of Physics and Mathematics (51 persons)

Name and specialty or field of expertise:
Chen Biao [7115 1753] (Solar Physics)
Chen Jingrun [7115 2529 3387] (Analytic Number Theory)
Cheng Kaijia [4453 7030 3946] (Theoretical Physics)
Cheng Minde [4453 3046 1795] (Theory of Functions)
Dai Chuanzeng [2071 0278 2582] (Experimental Nuclear Physics, Pile Physics)
Dai Yuanben [2071 0337 2609] (Particle Theory)
Deng Jiaxian [6772 4471 0341] (Theoretical Physics)
Fang Lizhi [2455 0536 0037] (Theoretical Astrophysics)
Feng Duan [7458 4551] (Lattice Defect)
Feng Kang [7458 1660] (Computational Mathematics, Physics, Mechanics)
Gu Chaohao [6253 6389 6275] (Differential Geometry, Partial Differential Equations, Theoretical Physics)
Guan Weiyan [4619 1919 3508] (Cryogenics, Superconductors)
Guan Zhaozhi [7070 5128 4160] (Functional Analysis)
Hao Bolin [6787 0130 2651] (Theoretical Physics, Computational Physics)
He Zehui (F) [0149 3419 1979] (Nuclear Physics)
He Zuoxiu [0149 4373 1652] (Particle Theory, Theoretical Physics)
Hong Chaosheng [3163 2600 3932] (Low Temperature Technology, Low Temperature Physics)
Hu Jimin [5170 3444 3046] (Theoretical Nuclear Physics)
Hu Shihua [5170 0013 5478] (Mathematical Logic, Computer Science)
Huang Zuxia [7806 4371 3174] (Theoretical Physics)
Jiang Boju [1203 0130 7467] (Topology)
Jin Jianzhong [6855 0256 0022] (Vacuum Technology)
Li Lin (F) [2621 2651] (Physics of Metals)
Li Yinyuan [2621 5593 6678] (Theoretical Physics, Solid State Physics)
Li Zhengwu [2621 2973 2976] (Plasma Physics, Nuclear Physics, etc)
Lin Wenji [2651 5113 7535] (Aerodynamics)
Lu Hefu [4151 7729 4811] (Theoretical Physics, Nuclear Physics)

Lu Qikeng [7120 0796 6972] (Theory of Multivariable Functions, Mathematical Physics
Qu Qinyue [2575 2953 1471] (High Energy Astrophysics)
Shen Yuan [3088 0337] (Aerodynamics)
Tan Haosheng [6151 6964 3932] (Mechanics, Mathematics, Physics)
Tang Xiaowei [0781 1321 1218] (High Energy Experimental Physics)
Wang Chengshu (F) [3769 2110 2579] (Theoretical Physics and Isotope Separation)
Wang Shouguan [3769 4849 3828] (Radio Astronomy)
Wang Yuan [3769 0337] (Number Theory)
Wei Rongjue [7614 2837 3635] (Acoustics)
Wu Shishu [0702 1709 2873] (Theoretical Physics)
Xia Daoxing [1115 6670 5887] (Functional Analysis, Theory of Multivariable Functions, Probability Theory)
Xiao Jian [5135 0256] (Cosmic Rays, High Energy Physics)
Xie Jialin [6200 1367 7792] (Accelerators)
Xie Xide (F) [6200 1585 1795] (Solid State Physics)
Xu Xurong [1776 0650 8833] (Luminescence)
Yang Chengzhong [2799 3397 0022] (Nuclear Physics)
Yang Le [2799 2867] (Theory of Functions)
Ye Shuhua (F) [5509 0647 5478] (Astrometry, Geostrophy)
Yu Min [0060 2404] (Theoretical Physics)
Zhang Zong [4545 4844] (Crystallography, Magnetism)
Zhou Guangzhao [0719 0342 0664] (Theoretical Physics, Particle Physics)
Zhu Guangya [2612 0342 0068] (Nuclear Physics)
Zhu Hongyuan [2612 3163 0337] (Theoretical Physics)
Zhuang Fenggan [5445 6646 3927] (Aerodynamics)

Department of Chemistry (51 persons)

Name and specialty or field of expertise:
Cai Qirui [5591 0796 3843] (Physical Chemistry)
Cao Benxi [2580 2609 3588] (Chemical Engineering, Radiochemical Engineering)
Cha Quanxing [2686 0356 1840] (Electrochemistry)
Chen Guanrong [7115 0385 2837] (Chemistry, Chemical Engineering)
Chen Jiayong [7115 1367 6978] (Chemical Engineering, Hydrometallurgy)
Chen Rongti [7115 2837 1879] (Complex Compounds)
Chen Ruyu (F) [7115 5423 3768] (Organic Compounds, Synthetic Agricultural Pesticides
Dai Anbang [2071 1344 6721] (Inorganic Chemistry, Colloidal Chemistry)
Feng Xinde [7458 2450 1795] (High Polymer Chemistry)
Gao Hong [7559 7703] (Electroanalytical Chemistry)
Gao Jiyu [7559 3444 1342] (Organic Chemistry)
Gao Xiaoxia (F) [7559 1420 7209] (Analytical Chemistry)
Gao Yisheng [7559 1837 3932] (Natural Organic Chemistry)
Gao Zhenheng [7559 2182 5899] (Organic Chemistry)
Gu Yidong [7357 5065 2639] (Rare Elements, Chemical Extraction)
Guo Musun [6753 1970 1327] (Chemical Engineering, Fluosolids)
Guo Xiexian [6753 3610 6343] (Physical Chemistry)
He Binglin [0149 3521 2651] (Macromolecular Chemistry)
Huang Liang (F) [7806 6852] (Organic Chemistry)
Huang Weiyuan [7806 4850 0997] (Organic Chemistry)
Huang Yaozeng [7806 5069 2582] (Organic Chemistry)

Ji Ruyuan [1518 3067 6678] (Organic Chemistry, Pharmaceutical Chemistry)
Jiang Lijin (F) [5592 7787 6855] (Organic Chemistry)
Jiang Mingqian [5592 2494 6197] (Organic Chemistry, Pharmaceutical Chemistry, Theoretical Organic Chemistry)
Liang Xiaotian [2733 2556 1131] (Organic Compounds, Natural Resultant Structure)
Liu Youcheng [0491 2589 4052] (Organic Chemistry)
Lu Peizhang [4151 0160 4545] (Analytical Chemistry)
Min Enze [7036 1869 3419] (Petroleum Chemistry, Catalysts)
Ni Jiazuan [0242 0857 4957] (Rare-earth Complex Compounds)
Peng Shaoyi [1756 1421 6654] (Petroleum Chemistry, Catalysts)
Qian Baogong [6929 0202 0501] (Macromolecular Chemistry and Physics)
Qian Renyuan [6929 0086 0337] (Macromolecular Physics, Physical Chemistry)
Shen Panwen [3747 3140 2429] (Inorganic Chemistry)
Shen Tianhui (F) [3088 1131 1979] (Analytical Chemistry, Semiconductor Chemistry)
Shi Jun [2514 6874] (Chemical Engineering)
Su Yuanfu [5685 0337 1788] (Chemical Engineering, Liquid-Liquid Extraction)
Tang Youqi [0781 2589 4388] (Physical Chemistry)
Tian Zhaowu [3944 2507 2976] (Electrochemistry)
Wang Baoren [3769 5508 0088] (High Polymer Compounds, Organic Compounds)
Wang Dexi [3076 1795 3356] (Chemistry, Chemical Engineering, Organic Macromolecules, Radiochemistry)
Wang Jiading [3076 1367 7844] (Chemical Engineering--Separation Processes)
Wang Xu [3769 1645] (Organic Chemistry, Organic Compounds)
Wu Chi [2976 6688] (Chemical Engineering)
Wu Haoqing [0702 3185 7230] (Physical Chemistry)
Wu Zhengkai [0702 1767 6963] (Physical Chemistry, Isotope Separation, Radiochemistry and Chemical Engineering)
Xiao Lun [5135 0243] (Radiochemistry, Isotope Preparation)
Xing Qiyi [6717 0366 3015] (Organic Compounds and Natural Resultants)
Xu Guangxian [1776 0342 2009] (Inorganic Physical Chemistry)
Yan Dongsheng [0917 2639 3932] (Materials Science)
Zhang Cunhao [1728 1317 3185] (Reaction Kinetics, Combustion, Laser Chemistry)
Zhu Yajie [2612 0068 2638] (Chemical Engineering, Solid Fuels Processing, Petrochemical Engineering)

Department of Biology (53 persons)

Name and specialty or field of expertise:
Bao Wenkui [7637 2429 1145] (Genetic Breeding)
Cai Xu [5591 2485] (Wheat Breeding and Cultivation)
Cao Tianqin [2580 1131 2953] (Protein Biochemistry)
Chen Huagui [7115 5478 4097] (Microbiology, Soil Microbiology)
Chen Zhongwei [7115 0022 0251] (Orthopedic Surgery, Limb Restoration, Microsurgery)
Fang Xinfang [2455 1800 5364] (Industrial Microbiology)
Gao Shangyin [7559 1424 5593] (Virology)
Hou Xueyu [0186 1331 3558] (Phytoecology and Geobotany)
Huang Zhenxiang [7806 2823 4382] (Virology)
Li Jingxiong [2621 2529 7160] (Cytogenetics, Crop Breeding)
Li Shanghao [7812 1424 6275] (Algology, Limnology)
Liang Dongcai [2733 2639 2624] (Biomacromolecular Structure)
Liang Zhiquan [2733 2784 2938] (Molecular Biology)

Liu Jiankang [0491 1696 1660] (Ichthyology, Freshwater Ecology)
Lou Chenghou [1236 2052 0683] (Plant Physiology, Biophysics)
Lu Baolin [7120 1405 7792] (Medical Entomology)
Ma Shijun [7456 0013 7486] (Insect Ecology)
Niu Jingyi [6873 4842 5030] (Biochemistry)
Pu Zhelong [5543 5832 7893] (Entomology)
Qiu Shibang [6726 1709 6721] (Insect Pest Research)
Qiu Weifan [5941 4850 5603] (Phytopathology, Mycology, Virology)
Shen Shanjiong [3088 0810 3518] (Microbial Biochemistry, Molecular Genetics)
Shen Yungang [3088 0336 6921] (Plant Biochemistry, Photosynthesis)
Shi Luji [2457 1462 0679] (Cytology, Genetics, Molecular Biology)
Tan Jiazhen [6151 1367 2823] (Cytogenetics and Evolutionary Genetics)
Tang Zhongzhang [0781 0112 3864] (Parasitology)
Wang Debao [3769 1795 1405] (Nucleic Acid Biochemistry)
Wang Fuxiong [3769 0102 7160] (Phytomorphology, Palynology, Phytoembryology)
Wang Kunren [3076 1024 0088] (Physiology, Histochemistry, Cytology)
Wang Shizhen [3769 0013 4176] (Nuclear Medicine)
Wang Zhijun [3769 1807 0971] (Alimentary Physiology)
Wu Jiaping [0702 0116 1627] (Urological Surgery)
Wu Min [0702 249C] (Cytogenetics, Oncology, Human and Medical Genetics)
Wu Zhonglun [0702 0022 0243] (Silvics, Forest Geography)
Xie Shaowen [6200 4801 2429] (Microbiology, Immunology)
Xiong Yi [7160 3015] (Soil Colloid Chemistry, Saline-Alkaline Soil Improvement)
Xu Guanren [1776 0385 0088] (Genetic Breeding)
Yan Xunchu [7051 6676 0443] (Actinomyces Taxonomy)
Yang Jian [2799 4675] (Pathological Anatomy, Experimental Pathology)
Yao [illegible] [1202 [illegible]] (Histochemistry, Oncobiology)
Yu Dejun [0205 1795 3182] (Phytotaxonomy, Horticulture)
Zeng Chengkui [2582 0701 1145] (Algology)
Zhang Zhiyi [1728 5268 0001] (Endocrinology, Embryology)
Zhao Shanqin [6392 0810 2953] (Insect Toxicology)
Zheng Guocheng [6774 0948 9480] (Phytocytology)
Zheng Zuoxin [6774 0155 2450] (Ornithology)
Zhou Tingchong [0719 1694 0394] (Biochemical Pharmacology)
Zhu Jiming [2612 2478 2494] (Virology)
Zhu Renbao [2612 1103 5508] (Physiology)
Zhu Zuxiang [2612 4371 4382] (Soil Chemistry)
Zhuang Xiaohui [5445 1321 1920] (Embryology, Experimental Embryology)
Zou Chenglu [6760 2110 7627] (Biochemistry, Molecular Biology)
Zou Gang [6760 1481] (Neuropharmacology)

Department of Earth Sciences (64 persons)

Name and specialty or area of expertise:
Chen Guoda [7115 0948 6671] (Tectonics)
Chen Shupeng [7115 6615 1756] (Natural Geography, Mapping, Applications of Remote Sensing Technology)
Chen Yongling [7115 3057 0109] (Astronomy, Geodesy and Balancing)
Cheng Chunshu [4453 4783 2873] (Meteorology)
Chi Jishang (F) [3069 7139 1424] (Petrology)
Ding Guoyu [0002 0948 3842] (Neotectonics and Seismic Tectonics)

Dong Shenbao [5516 3747 0202] (Petrology)
Fang Jun [2455 0193] (Atmospheric Surveying, Geophysics)
Gao Youxi [7559 3945 4406] (Climatology, Plateau Climatology)
Gao Zhenxi [7559 2182 6007] (Regional Geology, Regional Tectonics)
Gu Dezhen [6253 1795 2182] (Engineering Geology, Geomechanics)
Gu Zhiwei [7357 4249 1792] (Stratigraphic Paleontology)
Guan Shicong [7070 1102 5115] (Petroleum Geology)
Guo Chengji [6753 2110 1015] (Geochemistry, Mineral Chemistry)
Guo Wenkui [6753 2429 7608] (Regional Geology and Mineralization)
Hao Yichun (F) [6787 6095 4783] (Biostratigraphy, Micropaleontology)
Hou Renzhi [0186 0088 0037] (Historical Geography)
Huang Shaoxian [7806 4801 7359] (Uranium Ore Geology)
Jia Fuhai [6328 4395 3189] (Hydrogeology, Engineering Geology)
Jia Lanpo [6328 5695 0980] (Quaternary Geology, Paleolithic Archaeology)
Li Chunmin [2621 2504 2490] (Tectonic Geology, Tectonics, Regional Geology)
Li Xingxue [2621 2502 1331] (Paleobotany)
Liu Dongsheng [0491 2639 3932] (Quaternary Geology, Vertebrate Paleontology, Environmental Geology)
Liu Guangding [0491 0342 7844] (Offshore Geophysical Prospecting)
Lu Yanhao [4151 5888 6275] (Stratigraphic Paleontology)
Ma Xingyuan [7456 2622 0997] (Regional Geology, Tectonic Geology, Seismic Geology)
Mao Hanli [3029 3352 4409] (Marine Hydrophysics)
Mu Enzhi [4476 1869 0037] (Stratigraphic Paleontology)
Qin Xinling [4440 7451 5480] (Geophysics, Radiotelemetry)
Ren Meie [0117 5019 6948] (Geomorphology, Marine Geomorphology)
Shi Yafeng [2457 7161 7364] (Geomorphology, Glaciology)
Song Shuhe [1345 0647 0735] (Regional Petrology and Nonferrous Metal Mineralogy)
Sun Dianqing [1327 3013 0615] (Geomechanics, Quaternary Glaciology)
Tan Qixiang [6223 0366 7534] (Historical Geography of China)
Tao Shiyan [7118 6108 6056] (Synoptic Meteorology)
Tu Guangchi [3205 0342 3589] (Mineral Geochemistry, Mineralogy)
Wang Hengsheng [3769 1854 0581] (Petrology)
Wang Hongzhen [3769 7703 4394] (Stratigraphic Paleontology, Tectonics)
Wang Ren [3769 0088] (Plasticity, Geotectonic Dynamics)
Wang Yu [3769 6877] (Stratigraphic Paleontology)
Wang Yuelun [3769 2574 0243] (Stratigraphy, Quaternary Geology, Paleoglaciology, Volcanic Minerogenetics)
Wang Zhizhuo [3769 0037 0587] (Aerial Photosurveying)
Weng Wenbo [5040 2429 3134] (Geophysics)
Wu Rukang [0702 3067 1660] (Paleoanthropology, Human Anatomy)
Xie Xuejin [6200 1331 6930] (Geochemical Prospecting)
Xie Yibing [6200 5030 3521] (Meteorology)
Xu Keqin [1776 0344 0534] (Geology, Mineralogy)
Xu Ren [1776 0088] (Paleobotany)
Yang Zunyi [2799 6690 5030] (Stratigraphic Paleontology)
Ye Duzheng [5509 4648 2973] (Planetary Circulation, Dynamic Meteorology)
Ye Lianjun [5509 6647 0193] (Sedimentology, Sedimentary Mineralogy)
Ye Zhizheng [2814 3112 6927] (Sedimentology, Sedimentary Rocks)
Yuan Jianqi [5913 6015 7381] (Mineralogy, Sylvite Geology and Mineralogy)
Yue Xixin [1471 1585 2450] (Mineral Geology and Exploratory Mineral Surveying)
Zeng Qingcun [2582 1987 1317] (Meteorology)

Zeng Rongsheng [2582 5816 3932] (Solid State Geophysics)
Zhang Bingxi [1728 3521 3588] (Mineral Geology)
Zhang Bosheng [1728 0130 5116] (Tectonic Geology)
Zhang Zongyou [1728 1350 4368] (Hydrogeology, Engineering Geology)
Zhao Jinke [6392 6855 4430] (Stratigraphic Paleobiology)
Zhou Lisan [0719 4539 0005] (Economic Geography)
Zhou Mingzhen [0719 2494 6966] (Vertebrate Paleontology)
Zhou Tingru [0719 1694 0320] (Geomorphology, Natural Geography, Paleogeography)
Zhu Xia [2612 1115] (Petroleum Geology)

Department of Technical Sciences (64 persons)

Name and specialty or area of expertise:
Bi Dexian [3968 1795 7359] (Radar, Information Theory)
Cai Changnian [5591 2490 1628] (Power Plants and Power Grids)
Cai Jintao [5591 6855 3447] (Telecommunications Engineering)
Cai Qigong [5591 0366 7255] (Metals, Fracture Mechanics)
Cao Jianyou [2580 0256 3731] (Electrical Machinery, Railway Electrification)
Chang Tong [1603 0681/6595] (Radio Engineering)
Chen Fangyun [7115 5364 0336] (Radio Electronics)
Chen Nengkuan [7115 5174 1401] (Physics of Metals, Detonation Physics)
Chen Xinmin [7115 2450 3046] (Metallurgical Processes and Physical Chemistry)
Chen Xuejun [7115 1331 0193] (Thermodynamic Engineering)
Chen Zongji [7115 1350 1015] (Rock and Soil Mechanics, Rheological Mechanics, Geodynamics)
Ci Yungui [1964 0061 2710] (Electronic Computers)
Ding Shunnian [0002 5293 1628] (Electrical Machinery)
Gan Fuxi [1626 4395 3588] (Optical Materials, Amorphous Physics)
Gao Jingde [7559 2529 1795] (Electrical Machinery and Power Systems Transition Processes)
Gao Qingshi [7559 1987 3740] (Computer System Design)
Gong Zutong [7895 4371 0681] (Optics, Optical Glass, High-speed Cameras, Astronomical Telescopes)
Guo Kexin [6753 0668 0207] (Physical Metallurgy, Lattice Defect, Alloy Structures)
Hu Haichang [5170 3189 2490] (Elasticity)
Huang Hongjia [7806 1347 0857] (Microwave Electronics)
Ke Jun [2688 0193] (Physics of Metals, Metals)
Li Minhua (F) [2621 2404 5478] (Solid State Mechanics)
Liang Shou [2733 1343 2857] (Aircraft Engines, Rocket Engines, Flight Mechanics)
Lin Lanying (F) [2651 5695 5391] (Semiconductor Materials)
Lin Weigan [2651 3634 1626] (Microwave Theory)
Liu Huixian [0491 1863 0341] (Structural Engineering, Seismic Engineering)
Liu Shenggang [0491 4141 4854] (Microwave Electronics)
Lu Baowei [0712 0202 4850] (Electric Wave Propagation)
Lu Yuanjiu [7120 0337 0046] (Gyroscopes and Inertial Guidance)
Luo Peilin [5012 7198 7207] (Electronics)
Mao Henian [3029 7729 1628] (Electric Power)
Meng Shaonong [1322 1421 6593] (Automotive Design)
Pan Jiazheng [3382 1367 6927] (Civil Engineering, Hydropower Generation)
Pan Jiluan [3382 7139 7019] (Welding)
Qian Ning [6929 1380] (Silt Movement and Riverbed Evolution)

Qian Zhonghan [6929 6945 7281] (Heat Engineering Kinetics and Heat Engineering Automation
Ren Ximain [0117 2450 3046] (Rocket Engines)
Shen Hong [3088 7703] (Mechanical Engineering)
Shi Changxu [1598 2490 4872] (Metals, Physics of Metals)
Shi Shaoxi [0670 4801 3356] (Internal Combustion Engines, Combustion)
Wang Buxuan [3769 5943 1357] (Heat Engineering and Mass Transfer, Thermodynamic Engineering
Wang Shoujue [3769 1343 6030] (Microelectronics)
Wang Shouwu [3769 1343 2976] (Physics of Semiconductor Devices)
Wang Wenshao [3076 5113 7300] (Soil Mechanics and Antiseismic Earthen Dam Foundations)
Wei Shoukun [7614 1108 2492] (Metallurgy, Metallurgical and Physical Chemistry)
Wu Liangyong [0702 5328 6978] (Architecture and City Planning)
Wu Zilliang [0702 5261 5328] (Physical Metallurgy)
Xiao Jimei [5135 4764 5019] (Physics of Metals, Metal Materials)
Xu Caidong [1776 6846 2767] (Nonferrous Metallurgical and Physical Chemistry)
Xu Shiqao [1776 1102 7559] (High Voltage Engineering)
Xu Shilun [1776 5347 4858] (Engineering Mechanics)
Yang Jiachi [2799 0857 1062] (Space Cybernetics)
Yang You [2799 2881] (Ship Design)
Ye Peida [5509 1014 1129] (Photocommunication, Microwave Communication)
Zhang Enqiu [1728 1869 5876] (Electron Tubes, Cathode Electronics)
Zhang Peilin [1728 3099 7207] (Materials Science, Nuclear Fuel Metallurgy)
Zhang Xi [1728 3356] (Communication Engineering)
Zhang Zhongjun [1728 6945 0193] (Cybernetic Theory)
Zhang Zuomei [1728 0155 2734] (Machinery, Metal Pressure Processing)
Zhang Zhenlin [6774 0772 2404] (Mechanics, Explosion Mechanics)
Zhi Bingyi [2388 3521 1744] (Electrical Engineering Measurement, Instrument Manufacture, Information Processing Engineering)
Zhou Huijiu [0719 1920 0036] (Metal Materials and Strengths)
Zhuang Yuzhi [5445 5148 2535] (Physical Metallurgy)
Zou Yuanxi [6760 0337 8764] (Chemical Metallurgy, Semiconductor Materials)

Original Name List for Chinese Academy of Sciences Academic Department Committee Members

Of the 400 academic department committee members of the Chinese Academy of Sciences, 117 were approved in 1955 and 1957. (The original total was 190, but 73 have passed away.)

Departments of Physics and Mathematics (28 persons)

Name and specialty or area of expertise:
Hua Luogeng [5478 5012 1649] (Algebra, Number Theory, Theory of Multivariable Functions, Operations Research, Optimization)
Jiang Zehan [3068 3419 3211] (Topology, Mathematics)

Ke Zhao [2688 2507] (Number Theory)
Li Guoping [2621 0948 1627] (Theory of Functions, Mathematical Physics)
Lu Xueshan [7120 1331 0810] (Crystallophysics, X-ray Crystallography)
Peng Huanwu [1756 2719 2976] (Theoretical Physics)
Qian Linzhao [6929 5259 3564] (Physics of Metals)
Qian Sanqiang [6929 0005 1730] (Nuclear Physics)
Qian Weichang [6929 0251 7022] (Mechanics and Mathematics)
Qian Xuesen [6929 1331 2773] (Applied Mechanics, Engineering Cybernetics, Systems Engineering)
Shi Ruwei [2457 3067 3634] (Ferromagnetism)
Su Buqing [5685 2975 7230] (Differential Geometry)
Wang Dezhao [3076 1795 2507] (Hydroacoustics, Atmospheric Electricity)
Wang Ganchang [3769 3227 2490] (High Energy Physics, Cosmic Rays, Plasma Physics, Controlled Thermonuclear Reactions)
Wang Xianghao [3769 3276 3185] (Algebra, Artificial Intelligence)
Wang Zhuqi [3769 4554 3305] (Physics, Theoretical Physics)
Wu Wenjun [0702 2429 0193] (Topology, etc)
Yan Jici [0917 3444 1964] (Physics)
Yu Ruihuang [0151 3843 3874] (X-ray Crystallography, Physics of Metals, Solid State Physics Theory
Zhang Wenyu [1728 2429 5940] (Nuclear Physics)
Zhang Yuzhe [1728 6877 0772] (Astronomy)
Zhao Zhongyao [6392 1813 1031] (Nuclear Physics)
Zhou Peiyuan [0719 1014 3293] (Theoretical Physics, Fluid Mechanics)
Zhou Tongqing [0719 0681 1987] (Optics)

Department of Chemistry (16 persons)

Name and specialty or area of expertise:
Cai Liusheng [5591 9490 3932] (Physical Chemistry)
Hou Xianglin [0186 4382 7792] (Chemical Engineering)
Huang Ziqing [7806 1311 0615] (Physical Chemistry, Thermomechanics, Theory of Solutions
Ji Yufeng [4764 5148 3488] (Organic Chemistry)
Liang Shuquan [2733 2885 2938] (Analytical Chemistry)
Liu Dagang [2692 1129 4854] (Inorganic Chemistry, Physical Chemistry)
Lu Jiaxi [4151 0857 6932] (Physical Chemistry, Structural Chemistry)
Qian Zhidao [6929 1807 6670] (Organic Chemistry)
Tang Aoqing [0781 2407 1987] (Quantum Chemistry)
Wang You [3076 3731] (Organic Chemistry)
Wu Xuezhou [0702 1331 0719] (Physical Chemistry)
Yang Shixian [2799 4258 0341] (Organic Chemistry)
Yuan Hanqing [5913 5060 7230] (Organic Chemistry, History of Chemistry)
Zhang Dayu [1728 1129 3358] (Physical Chemistry, Catalytical Chemistry, Surface Chemistry)
Zhang Qinglian [1728 7230 5571] (Inorganic Chemistry, Isotopic Chemistry)
Zhao Zongao [6392 1350 3603] (Chemical Engineering, Petroleum Refining)

Department of Biology (36 persons)

Name and specialty or area of expertise:
Bei Shizhang [6296 2514 3864] (Experimental Embryology, Cytology)
Cai Bangkua [5591 6721 5478] (Entomology)
Cai Qiao [5591 5062] (Physiology)
Chen Shixiang [7115 0013 7534] (Entomology, Taxonomy)
Dai Songen [2071 2646 1869] (Crop Genetics and Breeding)
Feng Depei [7458 1795 1014] (Neurophysiology)
Hou Guangjiong [0186 0342 3518] (Pedology)
Huang Jiasi [7806 1367 7475] (Thoracic Surgery)
Jin Shanbao [6855 0810 1405] (Wheat Breeding)
Li Lianjie [2621 6647 2212] (Soil Geography, Natural Soils, Agricultural Zoning)
Li Qingkui [2621 1987 6652] (Agricultural Chemistry)
Lin Qiaozhi (F) [2651 1564 4460] (Obstetrics and Gynecology)
Lin Rong [2651 6954] (Phytology, Phytotaxonomy)
Liu Sizhi [0491 1835 5120] (Biochemistry, Immunochemistry)
Pan Shu [3382 5486] (Psychology)
Qin Renchang [4440 0088 2490] (Phytotaxonomy)
Shen Qizhen [3088 0366 7201] (Medicine, Physiology)
Sheng Tongsheng [4141 1749 4563] (Veterinary Medicine)
Tang Peisong [3282 0160 2646] (Phytophysiology, Biochemistry, Bioenergetics)
Wang Shaoyuan [3769 0810 3293] (Cosmic Radiation, Microbiology)
Wang Yinglai [3769 2019 4202] (Biochemistry)
Wei Xi [7614 2569] (Medical Microbiology, Medicine)
Wu Yingkai [0702 5391 1956] (Thoracic Surgery, Cardiovascular Surgery, Cardiovascular Disease Epidemiology)
Wu Youwen [0702 3731 2429] (Ichthyology)
Wu Zhengyi [0702 1767 6965] (Phytotaxonomy, Floral Geography)
Ye Jiegao [5509 2720 4108] (Traditional Chinese Medicine and Drugs)
Yin Hongzhang [3009 1347 4545] (Phytophysiology, Plant Biochemistry, Photosynthesis)
Yu Dafu [0205 1129 4811] (Phytopathology and Microbiology)
Zhang Xiangtong [1728 7449 2717] (Neurophysiology)
Zhang Xiaoqian [1728 1321 7505] (Internal Medicine, Alimentary System Diseases)
Zhang Xijun [1728 6932 6874] (Physiology)
Zhao Hongzhang [6392 3163 3864] (Wheat Breeding)
Zheng Wanjun [6774 8001 6874] (Dendrology, Forest Geography)
Zhong Huilan [6945 1920 3482] (Internal Medicine, Tropical Medicine, Parasitic Diseases, Microbiology, etc)
Zhou Zezhao [0719 3419 2507] (General Surgery)
Zhu Futang [6175 4395 2768] (Pediatrics)

Department of Earth Sciences (11 persons)

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Cheng Yuqi [4453 5940 3217] (Metamorphic Geology, Iron Ore Mineralogy)
Fu Chengyi [0265 2110 5030] (Geophysics)
Gu Gongxu [7357 0501 0650] (Geophysics)
Huang Bingwei [7806 4426 4850] (Natural Geography)
Huang Jiqing [7806 3078 3237] (Tectonic Geology, Tectonics, Stratigraphy, Petroleum Geology)

Pei Wenzhong [5952 2429 0022] (Geologic Paleontology and Archaeology)
Wu Heng [2976 5899] (Geophysics)
Xu Jie [6079 2638] (Geology, Stratigraphic Paleontology)
Yin Zanxun [1438 6363 0534] (Stratigraphy, Paleontology)
Yue Senxun [2867 2773 3769/1416] (Paleontology, Stratigraphy)
Zhang Wenyou [1728 2429 0147] (Tectonics, Tectonic Geology)

Technical Sciences Department (26 persons)

Name and specialty or area of expertise:
Chu Yinghuang [5969 2019 3874] (Electrical Machinery Manufacture, High Voltage Engineering)
Huang Wenxi [7806 2429 3356] (Hydraulic Engineering Structures, Rock and Soil Engineering)
Lei Tianjue [7191 1131 6030] (Precision Measurement, Precision Processing, Machine Design, Static Pressure Technology)
Li Guohao [2621 0948 6275] (Bridge Mechanics)
Li Qiang [2621 1730] (Radios)
Li Wencai [2621 2429 6846] (Iron and Steel Metallurgy)
Li Xun [2621 5651] (Physical Metallurgy)
Ma Dayou [7456 1129 3731] (Acoustics)
Mao Yisheng [5403 0110 0581] (Bridge Engineering, Structural Mechanics, Soil Mechanics)
Meng Zhaoying [1322 2507 5391] (Electronics, Physics)
Qian Lingxi [6929 0109 1585] (Engineering Mechanics, Structural Mechanics)
Shao Xianghua [6730 6272 5478] (Iron and Steel Metallurgy)
Sun Dehe [1327 1795 0735] (Smelting and Steelmaking, Casting, Processing)
Tao Hengxian [7118 0077 0752] (Machine Building)
Wang Daheng [3769 1129 3801] (Applied Optics)
Wang Huzhen [3076 5170 4394] (Hydraulic Engineering)
Wang Zhixi [3769 0037 3886] (Smelting and Steelmaking)
Wu Xuelin [0702 1331 5677] (Physics, Optics, Machinery, Metallurgy)
Wu Zhonghua [0702 0112 5478] (Mechanical Engineering, Impeller Aerodynamics and Thermomechanics)
Yan Kai [0917 1956] (Coastal Engineering)
Yang Tingbao [2799 1694 1405] (Architectural Design)
Zhang Guangdou [1728 0342 2435] (Hydraulic Engineering and Hydropower Generation)
Zhang Mingtao [4545 0682 3447] (Electrical Machinery)
Zhang Wei [1728 4850] (Engineering Mechanics, Structural Engineering)
Zhou Zhihong [0719 1807 1347] (Iron and Steel Metallurgy, Metallographic Heat Treatment)
Zhu Wuhua [2612 3670 5478] (Radio Engineering, Hydroacoustic Engineering)

9717
CSO: 4008/301

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS

FURTHER ON FINAL CAS SCIENTIFIC COUNCIL SESSION

Meeting at Zhongnanhai

OW211558 Beijing XINHUA in English 1538 GMT 21 May 81

[Text] Beijing, 21 May (XINHUA)--Hu Yaobang, general secretary of the Communist Party Central Committee, met the scientists attending the fourth session of the Scientific Council of the Chinese Academy of Sciences [CAS] on the last day of the session yesterday. Members of the Secretariat Wan Li, Fang Yi, Gu Mu, Song Renqiong, Yao Yilin and Peng Chong also attended the meeting in Huairen Hall in Zhongnanhai, the home of the Central Committee.

Hu Yaobang spoke about the situation throughout the country. He said that during his recent tour of Zhejiang and Shandong provinces, he saw good situations in rural areas. The peasants showed high enthusiasm for production. Village fair trade was the liveliest in several decades and a better harvest of wheat and other summer crops was expected.

Wan Li interrupted, saying he also had traveled 6,000 kilometers recently touring provinces. He said peasants were eagerly expecting science in their villages.

Hu Yaobang said that after the question of the responsibility system in farm production was basically solved, science would be the next step for increasing farm production. This was indeed a big change. Hu Yaobang said the economic situation since the beginning of the year was on the whole good and there had been greater stability and unity throughout the country. There had also been a turn for the better recently in the social climate. He said the situation in the country was very good, despite numerous problems.

He said the historical period of "setting things in order" had not yet come to an end and such work should be done continuously. He said though a tough road was still ahead, it was like climbing mountains and we could certainly reach the peaks after a period of hard climbing.

Scientists had made great contributions to the country. For this he expressed thanks on behalf of the Central Committee of the Communist Party of China.

Hu Yaobang proposed two things to the scientists. They should derive research tasks from social needs and they should proceed in their work as masters of the country.

Song Renqiong said science and education should start which children. "We should train children to have ambitions, lofty ideals and knowledge," he said.

Yao Yilin, also vice premier of the state Council in charge of planning work, said the economy and planning departments should cooperate with scientific circles "so as to put economic work on a more scientific basis in the future."

Professor Yan Jici, newly elected executive chairman of the presidium of the Chinese Academy of Sciences, also spoke.

Biography - Lu Jiaxi, President CAS

OW191235 Beijing XINHUA in English 1212 GMT 19 May 81

[Text] Beijing, 19 May (XINHUA)--Lu Jiaxi (Chia-si Lu), 66, an outstanding physical chemist, was elected president of the Chinese Academy of Sciences here today by the presidium of the Chinese Academy of Sciences.

Lu Jiaxi was born into a Taiwan teacher's family on October 26, 1915 in Xiamen, Fujian Province. He graduated from Xiamen University with a major in chemistry in 1934 and received his Ph.d. degree from the University of London, England, in 1939, after two years of postgraduate work in radiochemistry under Professor S. Sugden at University College, London. He went to the United States and did research on structural chemistry at the California Institute of Technology under Professor Linus Pauling. Upon his return to China at the end of 1945, he was appointed professor of chemistry in Xiamen University and served as dean of science, vice president and assistant to the president of the university. Since 1960, he has been a vice president of Fuzhou University, a new institute of science and technology in Fujian Province, and director of the Fujian Institute of Research on the Structure of Matter of the Chinese Academy of Sciences.

As a physical chemist, he has made notable contributions to the structural chemistry of cluster compounds, especially clusters of non-transition elements and transition metals. His recent work on "string-bag" structural models of the active center of nitrogenase and the attempted syntheses and structural studies of two series of model compounds has brought interesting results which may prove to have important bearing upon the chemical model of the nitrogen fixation enzyme.

Lu Jiaxi is a deputy to the National People's Congress. In 1979, the State Council conferred the title of National Model Worker upon him.

Biography - Yan Dongsheng, CAS Vice President

OW191343 Beijing XINHUA in English 1238 GMT 19 May 81

[Text] Beijing, 19 May (XINHUA)--Yan Dongsheng (Yen Tungsheng), 63, a noted inorganic chemist, was elected vice president of the Chinese Academy of Sciences by the presidium of the Chinese Academy of Sciences here today.

Yan Dongsheng was born on February 10, 1918 in Hangzhou, Zhejiang Province. He started studies on chemistry at Qinghua University in 1935 and graduated from

Beijing's Yenching University in 1939. Later, he went to the United States and studied at the University of Illinois where he received his Ph.d. in 1949.

He was deputy director of the Institute of Chemical Engineering of the Kailuan Mining Administration from 1950 to 1954. He then worked in the Institute of Metallurgy and Ceramics of the Chinese Academy of Sciences as a research professor and became the director of Shanghai Institute of Cermaic Chemistry and Technology. Since 1978, he was the vice president of the Shanghai branch of the Chinese Academy of Sciences.

He is China's most outstanding scientist in the field of inorganic materials research and materials science. He has made important contributions to push inorganic materials research to an up-to-date level in his institute with a wide range of projects on single crystal studies, amorphous materials research, oxide and non-oxide ceramics research and coating materials research.

Yan Dongsheng believes that intensive inorganic materials research should go hand in hand with metals research and polymer research to enrich materials science and that intensive inorganic materials research will help develop new high temperature structural materials to serve the needs of modern technology.

Biography - LI Xun, CAS Vice President

OW191339 Beijing XINHUA in English 1234 GMT 19 May 81

[Text] Beijing, 19 May (XINHUA)--Li Xun, 68, noted metallurgist, was elected vice president of the Chinese Academy of Sciences by the presidium of the Chinese Academy of Sciences.

Li Xun was born in Shaodong County, Hunan Province, on November 20, 1913. He graduated from Hunan University in 1936 and went to England on scholarship to study metallurgy in 1937. He became a post-doctorate research fellow at the University of Sheffield and was in charge of metallurgical research there from 1945 to 1951. He was awarded his Ph.d. degree in metallurgy and then returned to China.

He has been director of the Institute of Metallurgical Research of the Chinese Academy of Sciences since 1953. He was appointed president of the Shenyang branch of the CAS in 1979.

Li Xun did pioneer work on hydrogen in steel in the 1940's in England. In collaboration with other researches, he also carried out comprehensive studies on the effect of cold-working on steel.

He has contributed to research on the metallurgy of uranium, the production of tank and airplane materials and a number of other key metallurgical problems in China.

Biography - Yan Jici, CAS Executive Chairman

OW191243 Beijing XINHUA in English 1217 GMT 19 May 81

[Text] Beijing, 19 May (XINHUA)--Yan Jici (Ny Tsi-ze), 81, an outstanding physicist, was elected executive chairman of the presidium of the Scientific Council of the Chinese Academy of Sciences by the presidium here today.

According to the newly adopted trial constitution of the academy, the Scientific Council is the highest decision-making body of the Chinese Academy of Sciences. When it is not in session, the presidium of the Chinese Academy of Sciences is the decision-making body.

Yan Jici was born in Dongyang County, Zhejiang Province on December 4, 1900. He graduated from Nanjing Teachers' College and went to study at the Sorbonne in 1923. He returned to China in 1927 after he got the doctorate of sciences. He went to France again in 1928 and did research work at the Laboratoire d'Enseignement Physique under Professor Charles Fabry and then at the Laboratoire de Grand Electro-Aimant under Professor A. Cotton. He was elected a member of the Council of the French Society of Physics in 1935 together with F. Joliot and P. Kapitza. After he came back from France, he helped found the Academy of Sciences' Institute of Physics and Institute of Uranium in Beijing. From 1945 to 1946, Professor Yan went to the United States as a visiting professor upon the invitation of the Department of State.

Professor Yan Jici was director of the General Office of the Chinese Academy of Sciences and director of the Institute of Physics from 1949 to 1952. He became president of the Northeast China Branch of the Chinese Academy of Sciences in 1952 and remained in Liaoning until 1955 when he came back to Beijing to head the Department of Technical Sciences of the Chinese Academy of Sciences.

He was made vice president of the Chinese Academy of Sciences in 1978 and has been the editor in chief of SCIENTIA SINIA (Chinese Sciences) since 1977. He is a member of the Standing Committee of the National People's Congress.

Professor Yan Jici's main field of research is in spectroscopy and piezo-electricity. He has done remarkable work on deformations and changes of the optical properties of quartz under an electrical field, pressure effect on photographic sensitivity, the absorption spectra of alkaline metal elements under an electrical field and ultra-violet absorption of ozone.

Professor Yan Jici is a member of the international scientific committee of the Parc International d'Activite Valbonne Sophia-Antipolis.

Biography - Qian Sanqiang, Vice President

OW191245 Beijing XINHUA in English 1224 GMT 19 May 81

[Text] Beijing, 19 May (XINHUA)--Qian Sanqiang, an outstanding physicist, was elected vice president of the Chinese Academy of Sciences by the presidium of the academy here today.

Qian Sanqiang was born into a famous scholar's family on October 16, 1913, in Zhejiang Province. He graduated from the Department of Physics of Qinghua University in 1936 and went to France to do research work at the Pierre Curie Laboratory in Paris and at a number of other institutions. He returned to China in 1948. He held the positions of deputy director of the Institute of Modern Physics and deputy director of the Planning Department of the Chinese Academy of Sciences from 1950 to 1952. After 1952, he became director of the Institute of Physics, director of the Planning Department and deputy secretary general of the Chinese Academy of Sciences and director of the Institute of Atomic Energy. He was appointed vice president of the Chinese Academy of Sciences and president of Zhejiang University in 1978.

Qian Sanqiang won the Henry de Parville Award for Physics of the French Academy in 1946. Together with his wife He Zehui, also a physicist, he discovered the tripartition and quarternary fission of uranium in 1946 and 1947. His work has contributed to a deeper understanding of the mechanism of fission.

Qian Sanqiang has made important contributions to China's nuclear research and atomic energy. He has helped educate the new generation of Chinese nuclear physicists. Under his guidance, a group of physicists in Beijing devised the basic particle "straton model."

Biography - Ye Duzheng, Vice President

OW191355 Beijing XINHUA in English 1243 19 May 81

[Text] Beijing, 19 May (XINHUA)--Ye Duzheng, 65, noted meteorologist, was elected vice president of the Chinese Academy of Sciences here today at a presidium meeting of the Chinese Academy of Sciences.

Ye Duzheng was born in Anqing, Anhui Province, February 21, 1916. He graduated from Qinghua University in Beijing in 1940 and from the graduate school of Zhejiang University in 1943. He did research work at the Meteorological Institute of Chicago University from 1946 to 1950.

After he returned to China in 1950, Ye Duzheng worked at the Institute of Geophysics until 1965. In the meantime, he taught meteorology at a number of universities. In 1966, he became director of the Institute of Atmospheric Physics of the Chinese Academy of Sciences.

He proved theoretically in 1949 that a powerful disturbance in the upstream of westerlies will cause a similar disturbance in the downstream of easterlies. He was the first meteorologist to discover the existence of the high wind currents in the troposphere from the southern side of the Tibetan plateau through the Yangtze River Valley to Japan. This current has great impact on the climate of China. He has also done much work on the study of the effect of the powerful heat source of the Tibetan plateau on the atmospheric circulation over East Asia. He is now studying the air-land interaction in collaboration with other scientists.

Biography - Feng Depei, Vice President

OW191315 Beijing XINHUA in English 1229 GMT 19 May 81

[Text] Beijing, 19 May (XINHUA)--Feng Depei (Feng T.P.), 74, China's outstanding neuro-physiologist, was elected vice president of the Chinese Academy of Sciences by the presidium of the CAS here today.

Feng Depei was born in Linhai County, Zhejiang Province in 1907. He graduated from Fudan University in Shanghai in 1926, went to the United States in 1934 and finished his post-graduate study at the Department of Physiology of the University of Chicago.

Feng Depei worked in a laboratory at the University of London from 1930 to 1933, took a Ph.d. there and then returned to China. He taught at Peiping Union Medical College, Beijing Teacher's University and a number of other colleges.

After liberation, he was director of the Institute of Physiology and Bio-Chemistry and the Institute of Physiology under the Chinese Academy of Sciences, and he became vice president of the Shanghai Branch of the CAS in 1977. He is a member of the Standing Committee of the Fifth National Committee of the Chinese People's Political Consultative Conference and vice chairman of the Shanghai Municipal Committee of the Chinese People's Political Consultative Conference.

Feng Depei is noted for his research in neuromuscular physiology. He discovered what is known as the "Feng's effect," concerning the heat production of neuro-transmission, in the 1930's. He has made other major achievements in the study of such bio-physical phenomena as neuromuscular dynamics, neuromuscular junction and the nutritious interrelations between nerves and muscles.

PRC Academy of Sciences Elects Presidium

OW200150 Beijing XINHUA Domestic Service in Chinese 1403 GMT 19 May 81

[Text] Beijing, 19 May (XINHUA)--Assembled together, all members of the Fourth Session of the Scientific Council of the Chinese Academy of Sciences cast their secret ballots to elect the presidium of the CAS. The hall was filled with a happy and respectful atmosphere. Members of the scientific councils for mathematics, physics, chemistry, biology, earth sciences and technical sciences took their seats according to districts in front of five red ballot boxes. As the election process started amid music, they filed past the ballot boxes to vote. This was the first time they exercised the power of the Scientific Council to elect the supreme leading organ of the CAS.

The presidium of the Scientific Council announced the election results amid warm applause. Members of the presidium are arranged in order according to the number of brush strokes in their surnames as follows: Yu Guangyuan, Wang Dahang, Wang Ganchang, Ye Duzheng, Feng Depei, Lu Jiaxi, Hua Luogeng, Song Ping, Yan Dongsheng, Yan Jici, Li Chang, Li Xun, Wu Zhonghua, Wu Fengyi [0702 1767 6965], Wu Heng, Yu Wen, Zhou Peiyuan, Zhang Wenyou, Zhang Guangdou, Hu Keshi, Hou Xianglin, Qin Lisheng, Qian Sanqiang, Qian Xuesen, Tu Guangchi [3205 0342 3589], Gao Yi, Tang Aoqing, Huang Jiasi and Xie Xide [6200 1585 1795] (female). The election results announced at the meeting were greeted with prolonged warm applause.

CSO: 4020/197

PUBLICATIONS

TABLE OF CONTENTS OF 'GONGCHENG KANCHA,' NOVEMBER 1980

Beijing GONGCHENG KANCHA [ENGINEERING SURVEYING] in Chinese No 6, 22 Nov 80 p 80

[Text] Table of Contents

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CSO: 4008/142

PUBLICATIONS

TABLE OF CONTENTS OF 'HUAFI GONGYE,' DECEMBER 1980

Shanghai HUAFEI GONGYE [CHEMICAL FERTILIZER INDUSTRY] in Chinese No 6, Dec 80 p 1

[Text] Table of Contents

9296
CSO: 4008/173

PUBLICATIONS

TABLE OF CONTENTS OF 'SHUINI,' DECEMBER 1980

Beijing SHUINI [CEMENT] in Chinese No 6, 10 Dec 80 p 1

[Text] Table of Contents

9296
CSO: 4008/206

PUBLICATIONS

CONTENTS, ABSTRACTS FROM 'FANGZHI XUEBAO' 1981

Shanghai FANGZHI XUEBAO [JOURNAL OF TEXTILE RESEARCH] in Chinese No 2, 1981 pp 78-79 (Sum No 11)

[Text] Contents and Abstracts

Research Reports:

A Study on the Chemical Constitution of the Fibroin of Chinese Cultivated Silk

The total analysis data of eighteen amino acids for the two main Chinese cultivated silkworm (Su6×Su8, Su16×Su17) kinds were obtained by means of the automatic amino-acid analyzer and chemical methods and were found to be fairly satisfactory. Also comparison was made with the fibroin of the silkworm, the gland and the cocoon of the same Japanese species. Through Infrared Spectrophotometer, X-ray diffraction technique and Differential Scanning Calorimeter it has further been proved that the chemical constitution of the fibroin of all the Bombyx Mori is almost similar. Besides, it has been shown that there is little difference in the amino acid constitution between the gland fibroin and the silk fibroin. Only thier physical aggregation structures are somewhat different from each other. ..... Qian Guo-di et al.(2)

A Study on the Distribution of the Crystalline Region and the Amorphous Region of Chinese Bombyx Mori Fibroin

In this paper a fibroin solution which has been prepared from dissolving silk fibroin in lithium thiocyanate was hydrolysed by α-chymotrypsin. The product was seperated into precipitation part (C_P) and solution part (C_S). These two parts were studied by means of physical tests to evidence that the precipitation part is the crystalline region of the fibroin and the solution part is the amorphous region. The amino acids contained in soluble fractions of fibroin were determined by means of the automatic amino acid analyzer. It is evident that amino acids constitution of C_P and C_S in various silk fibroins (Bombyx Mori) are the same but the individual amino-acid content of C_P and C_S differs greatly. Besides through X-ray diffraction method, the crystalline degree was approximately calculated by means of the fraction weights of the C_P and C_S and the nitrogen contents of C_P and C_S.
..... Mai Shi-ying et al.(10)

A Study on the Condition of Raw Silk Surface Greening due to Pseudomonas Aeruginosa

The surface greening of raw silk due to pseudomonas aeruginosa has been confirmed by bacteriological examination. Through experiments the worsening in interior quality of greened raw silk is observed. It has been found that this greening is most likely to happen at 25°~30℃ and about 90% R. H. Therefore in summer attention must be paid to get a good ventilation for raw silk storage, disinfestant may be used if necessary. The fabrics woven with greened raw silk must be scoured immediately for the prevention from further deterioration in quality.
..... Sheng Jie-yong et al.(17)

Edited By

Textile Engineering Society of The People's Republic of China

CSO: 4008

AUTHOR: WANG Zuokun [3769 0155 6924]

ORG: None

TITLE: "Human Cities and Environments--Discussion Meeting Held by the Fourth District International Association of Architects in Tokyo"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, 81 p 71

ABSTRACT: In response to an invitation by the Fourth District Executive Committee of the International Association of Architects, the Chinese Architectural Society sent a 3-men delegation to attend the 1980 discussion meeting (including 14 countries of Asia and Oceania.) Under the major heading of Human Cities and Environments, 3 subjects:(1) Public installations and buildings; (2) Collective residents; (3) Mankind and environment were discussed. The Chinese delegation read several papers and showed slides on ancient architecture and city development in Beijing. Opinions concerning the aforementioned subjects exchanged at the meeting are briefly summarized in the paper.

AUTHOR: None

ORG: None

TITLE: "Strengthen Energy Conservation Research in Architecture"

SOURCE: Beijing JIANZHU XUEBAO [ARCHITECTURAL JOURNAL] in Chinese No 3, 81 pp 72-73

ABSTRACT: In early Dec 80 a symposium on energy conservation technology in archinology was called by the State's General Bureau of Construction Engineering. Participants included specialists in fields of designing, scientific research, and education. Achievements in recent years in various aspects of energy conservation, such as improving boiler efficiency, high temperature hot water heating system, utilization of residual heat, waste heat, solar energy, and ground heat for heating, cooling systems using tunnel ventilation, deep well ground water, etc., theories of new high efficiency light sources, cycling waste water, and multiple uses of water, etc. were exchanged. Some arrangements concerning future energy conservation work were also made. Experience in foreign countries indicates that the higher is the degree of modernization, the greater is the energy consumption of buildings. This problem was presented to the delegates in the hope that the leaders and designers will give it their full attention.

6168
CSO: 4009/279

AUTHOR: CHEN Xikang [7115 6932 1660]

ORG: Institute of Systems Science, Chinese Academy of Sciences

TITLE: "Some Mathematical Economic Models for Allocation of Productive Forces"

SOURCE: Beijing DILI XUEBAO [ACTA GEOGRAPHICA SINICA] in Chinese Vol 36 No 1, Mar 81 pp 1-12

TEXT OF ENGLISH ABSTRACT: In this article we discuss the problems of allocation of production forces using the methods of system sciences. The article is divided into six parts. Part I covers economic criterion and principles for the allocation of productive forces. The economic criterion is to minimize the total production and shipping cost as well as the occupied capital stock which is calculated in the consumption place of each product.

In part II we try to formulate a model for allocation of productive forces suitable for a production site near the consumption place (model 1). It is a linear programming model. In this model there are six sets of constraints:
1. The received amount of a certain product in each consumption place is equal to its required amount.
2. The amount shipped from each production site is equal to its amount of production.
3. The amount of production in each production site cannot exceed the productive capacity.

[Continuation of DILI XUEBAO Vol 36 No 1, Mar 81 pp 1-12]

4. The productive capacity constructed in each production site cannot exceed the limit.
5. The total amount of capital required to construct the productive capacity in all production sites cannot exceed the fixed amount.
6. Nonnegativity of variables.
The objective function of this problem is to minimize the total production cost and shipping cost multiplied by the recovered period of capital plus occupied capital stock. This model can be solved by a simple method. In this part we show the necessary condition to obtain the optimum solution of this problem.

In part III we try to formulate a model for allocation of productive forces suitable for a production site near the material base (model 2).

In part IV we are concerned with a model for allocation of productive forces suitable for a production site near the consumption place and material base (model 3).

In part V we discuss a model for allocation of productive forces when the enterprises are grouped according to size, e.g., large, medium and small (model 4). Each one has a different production cost and different investment per unit of product. It is a nonlinear programming model which contains nine sets of constraints, including the following nonlinear constraints:

$$(W_i^l)^2 \geq q^l W_i^l, \quad i = 1, 2, \ldots, m; \; l = 1, 2, \ldots, v$$

[Continuation of DILI XUEBAO Vol 36 No 1, Mar 81 pp 1-12]

where W_i^l is the capacity of a newly built enterprise of type l at site i, and q^l is the lowest capacity of enterprise of type l. These constraints ensure that the capacity of a newly built enterprise of type l is either greater than or equal to q^l, or equal to zero. This model can be solved by the sequential unconstrained minimization technique (SUMT).

In part VI we consider other factors in the allocation models, for example, security of each production site from the point of view of national defense, developing of the frontier areas, environmental protection, etc. (model 5). Using the allocation coefficient of each production site we revise the objective function of the above-mentioned models and obtain new allocation models.

AUTHOR: CHEN Kezao [7115 0344 6644]
YANG Shaoxiu [2799 4801 0208]
ZHENG Xiyu [6774 0823 3768]

ORG: All of the Qinghai Institute of Salt Lakes, Chinese Academy of Sciences

TITLE: "The Salt Lakes on the Qinghai-Xizang Plateau"

SOURCE: Beijing DILI XUEBAO [ACTA GEOGRAPHICA SINICA] in Chinese Vol 36 No 1, Mar 81 pp 13-21

TEXT OF ENGLISH ABSTRACT: The eolian lakes are well developed on the Qinghai-Xizang Plateau. From the Pliocene period up to the present, there have been two periods of mineralization. The first one took place in the Pliocene period, in which the minerals, such as gypsum, glauber salt and halite, were major products. The second period took place from the Late Pleistocene up to the present, during which boron, lithium and potassium were highly concentrated--one of the most significant characteristics of this period. The saline lakes on the Qinghai-Xizang Plateau can be classified into two zones: the sulfate-chloride type in the Qaidam Basin and the carbonate-sulfate type in northern Xizang. Some of the saline lakes in this district developed based on the Neogene fossil lakes, while others were newly grown in the Quaternary. Most of them are tectonic lakes. Rocks and hot springs are the main sources of the saline lake minerals.

AUTHOR: LIN Zhenyao [2651 2182 5069]
WU Xiangding [0702 4382 1353]

ORG: Both of the Institute of Geography, Chinese Academy of Sciences

TITLE: "Climatic Regionalization of the Qinghai-Xizang Plateau"

SOURCE: Beijing DILI XUEBAO [ACTA GEOGRAPHICA SINICA] in Chinese Vol 36 No 1, Mar 81 pp 22-32

TEXT OF ENGLISH ABSTRACT: In this paper, the climatic regionalization of the Qinghai-Xizang Plateau is based on the climatic data of 191 stations up to 1970, and of the Xizang area up to 1975.

The temperature index is taken as the first criterion for regionalization. This index includes the number of $\geq 10^{\circ}C$ days and the mean temperature of the warmest month. On this basis, the Qinghai-Xizang Plateau is delimited into three climatic zones, i.e., plateau temperate, plateau subfrigid and plateau frigid, while the southern slopes of the Himalayas are distinguished separately into north tropical and subtropical montane climatic regions.

Aridity and annual precipitation are used as the second criterion for regionalization. Aridity is the ratio of the potential evaporation and the precipitation in which the potential evaporation is obtained from H. L. Penman's formula. Based on

[Continuation of DILI XUEBAO Vol 36 No 1, Mar 81 pp 22-32]

this, the climatic zone is distinguished into humid, sub-humid, semi-arid, arid and dry types.

Finally, according to the integration of temperature and humidity index, the Qinghai-Xizang Plateau is divided into 13 climate regions. The results of the climatic regionalization are shown.

AUTHOR: LIU Xingtu [0491 5281 0960]
et al.

ORG: All of the Department of Marsh Research, Changchun Institute of Geography, Chinese Academy of Sciences

TITLE: "A Preliminary Study on the Change of Natural Environment after Current Large-scale Reclamation in the Sanjiang Plain"

SOURCE: Beijing DILI XUEBAO [ACTA GEOGRAPHICA SINICA] in Chinese Vol 36 No 1, Mar 81 pp 33-46

TEXT OF ENGLISH ABSTRACT: The Sanjiang Plain, with an area of 51,300 square kilometers, lies at the northeastern border of China. It abounds with natural resources, yet in recent years there are such signs of deterioration in natural environment as the increasing of drought and wind erosion, decreasing of runoff and vegetation cover, etc. In addition, most parts of the marshlands in this region have a tendency to develop into meadows and swamping meadows.

So far as drought is concerned, the influence of atmospheric circulation plays a leading role, while the influence of human activities plays a secondary role.

In order to prevent the deterioration of the ecological environment, it is imperative to take the following measures: rationalized utilization of natural resources

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and all-round development of agriculture, forestry, animal husbandry, sideline production, fisheries; building up a water conservancy system of combining drainage with storage, developing irrigation and enlarging the area of rice farming and combining the utilization of farmland with the maintenance of its fertility; protecting specific marshlands by setting up reed production bases and marshland conservation.

AUTHOR: ZHOU Shuzhen [0719 3219 6297]
ZHANG Xiubao [1728 4423 1405]
GUO Shulin [6753 3219 7792]

ORG: All of the East China Teachers' College

TITLE: "On the Fog of Shanghai"

SOURCE: Beijing DILI XUEBAO [ACTA GEOGRAPHICA SINICA] in Chinese Vol 36 No 1, Mar 81 pp 47-58

TEXT OF ENGLISH ABSTRACT: The fog of Shanghai can be classified into the following four types: radiation fog (accounting for 44.8 percent), frontal fog (accounting for 24.8 percent), advection fog (accounting for 17.6 percent) and advection-radiation fog (accounting for 12.8 percent). As shown by the records of the last 77 years, there are 43.5 foggy days per year on the average. But the annual variation is very remarkable, e.g., there were 107 foggy days in 1950, but only 17 foggy days in 1917; the former is more than six times as much as the latter. There are two foggy seasons yearly: one occurs from October to December, and the other from March to May. Fogs rarely appear in the summer (July and August). In this paper the regularity and causes of the seasonal and diurnal variation of fog in Shanghai are discussed.

The regional differences between urban districts of Shanghai and its suburbs are obvious. There are far more foggy days each year in its urban districts and the

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foggy season there is also much longer. The distribution of foggy days is closely related to the frequency of wind direction, wind velocity and coefficient of air pollution. Meteorological observations for a long period have proved that the fog in Shanghai urban districts may be formed in lower relative humidity (such as 67 percent), but in the suburbs of Shanghai only in very high relative humidity (98-100 percent). Finally, it is pointed out that the fog of Shanghai is closely related to its geographical environment and the features of general circulation of the atmosphere.

AUTHOR: HUANG Xingzhen [7806 2622 3791]
PAN Zhonghai [3382 0022 3189]

ORG: Both of Lanzhou Institute of Geology, Chinese Academy of Sciences

TITLE: "Applying Granularity Data to Research on the Characteristics of Eolian Sand in the Southwestern Part of the Mu Us Desert"

SOURCE: Beijing DILI XUEBAO [ACTA GEOGRAPHICA SINICA] in Chinese Vol 36 No 1, Mar 81 pp 70-78

TEXT OF ENGLISH ABSTRACT: This article studies the grain size distribution curves of the eolian sands and the chief features of the grain size parameters in the southwestern part of the Mu Us Desert. The following conclusions are obtained:
1. The eolian sands in this area are chiefly shaped by winds of two contrasting directions, the northwestern and the southeastern, of which the former dominates.
2. The chief characteristics of the eolian sands are that sorting is excellent, the transporting process is uniform, and saltation predominates; hence, they can be identified and differentiated from the fluvial sands.
3. The grain size distribution curves might be used for investigating the material source of the eolian sands.

AUTHOR: LI Xiuyun [2621 4423 0061]
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ORG: Both of the Institute of Geography, Chinese Academy of Sciences

TITLE: "An Analysis of Annual Runoff of West Sichuan and North Yunnan"

SOURCE: Beijing DILI XUEBAO [ACTA GEOGRAPHICA SINICA] in Chinese Vol 36 No 1, Mar 81 pp 90-100

TEXT OF ENGLISH ABSTRACT: The region of western Sichuan and northern Yunnan, with a total area of about 500,000 km^2, is located in southwestern China (96-105°E, 25-36°N).

The river runoff of this district is mainly fed by precipitation, which is closely related to the monsoon climate. The Daxueshan Mountain-Daliangshan Mountain line is a demarcation line. To the west of this line, the main influence is the southwest monsoon, as the rainy season comes later and the precipitation is more concentrated in the summer and the dry and humid seasons are very distinct, so the unevenness of the coefficient value of the annual runoff (Cv) is high. To the east of the line, the influence is the southeast monsoon, and the distribution of annual rainfall is relatively even.

This area is a mountainous region, with many high mountains and plateaus. Differences in elevation are very great, especially in the region of the Hengduanshan

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Mountain. Under the influence of climate and other natural factors--for example, relief, vegetation, soil, etc--vertical zonation is very evident.

Below 3000 meters is the subtropical region of this area, where the runoff increases as the elevation increases, mostly in the form of storm runoff. Above 3000 meters, the storm runoff decreases and the runoff hydrograph presents feeble variation. The amount of annual runoff tends to be reduced from east toward west and south. But to the west of Gaoligong Shan Mountain, the amount of rainfall can reach 1000 mm.

The annual mean precipitation of this region is 883 mm, runoff depth is 481 mm, and annual water yield is about 240 billion m^3. The variation of river runoff over many years is not considerable. In general, the coefficient of skew (C_v), except in north Yunnan which is above 0.3, is from 0.1 to 0.25; compared with the eastern part of China, it is rather small.

The runoff flow and water resources of this region are very abundant. Therefore, it is an excellent region for the full development and utilization of water resources.

9717
CSO: 4009

AUTHOR: NI Keqin [4745 0344 0530]

ORG: Maanshan Institute of Iron and Steel Technology

TITLE: "Calculation of Blast Furnace Fuel Consumption by Required Temperature"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 1, 1981 pp 1-9

TEXT OF ENGLISH ABSTRACT: This paper discusses the relationship between adiabatic flame temperature, top temperature and degree of gas utilization in a blast furnace. In accordance with the theory of heat exchange, a formula is derived for calculating these temperatures as well as the hot metal temperature and fuel consumption. Using this formula it is possible to calculate the coke ratio and analyze the optimum conditions for operating the blast furnace with auxiliary fuel injection. The quantitative relationship can also be used as a mathematical model for computer control of the blast furnace. Since the temperature input can be obtained continually, the on-line control should be more effective than with ordinary models if we can link the model to the control of burden velocity and gas distribution.

AUTHOR: CHU Shaobin [0328 4801 1755]
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ORG: Both of the Institute of Chemical Metallurgy, Chinese Academy of Sciences

TITLE: "Reduction Process of Fine Concentrates of V-Ti-bearing Magnetite"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 1, 1981 pp 10-18

TEXT OF ENGLISH ABSTRACT: The mineralographical composition and reduction process of three fine concentrates of V-Ti-bearing magnetite are studied. The main mineralographical composition of A, B fine concentrates involves magnetite and ilmenite. The observed net-like microstructure is the oxidization product of ulvospinel, i.e., ilmenite and magnetite. It was observed that the ulvospinel was reduced through ilmenite in the temperature range of 500-800°C, and that the ilmenite during the reduction process also went through ulvospinel when residual iron oxide existed. Preoxidization of ilmenite ore in coarse grains may improve its reducibility considerably. Concentrate B appears to be overreduced at 600°C.

AUTHOR: ZHONG Yixiu [6945 2184 4423]
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ORG: All of the Central Iron and Steel Research Institute

TITLE: "Solidification and Its Structure of GCr15 Steel Remelted by ESR, VAR and EBR"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 1, 1981 pp 19-24

TEXT OF ENGLISH ABSTRACT: Some essential characteristics during solidification of GCr15 remelted by ESR, EBR and VAR are analyzed and compared in the paper. The dendritic secondary arm spacings S_{II} were measured for the three ingot types. S_{II} (ESR) is 60-102μ; S_{II} (VAR) is 54-120μ; S_{II} (EBR) is 70-132μ. Based on S_{II}, the local average cooling rate, R_T, the distance of the mushy zone, X_T, the local solidification time, t_T, and the temperature gradient, G, in different regions of the ingots were calculated and discussed. It was found that the macrostructure of ingots, the size and distribution of nonmetallic inclusions and carbides, and the dendritic microsegregation were closely related to the local average cooling rate R_T. On making a remelting program attention should be paid to selecting a high cooling rate.

AUTHOR: ZHANG Qiang [1728 1730]
GONG Yonghui [1362 3057 6540]

ORG: Both of the Xian Institute of Metallurgical and Constructional Engineering

TITLE: "The Volume per Second in Longitudinal Direction of Rolling Process Is Not Equal"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 1, 1981 pp 25-34

TEXT OF ENGLISH ABSTRACT: It is stated in the previous literature that the volume per second in the longitudinal direction of a rolling process is equal at each cross section, and is a constant. But we find that the volume per second, in general, is not equal in the longitudinal direction of a rolling process. The reason for unequal volume per second in the rolling process is discussed in the present paper and the inequality was proved by test results. The following equations for volume per second for calculation are derived:

$$(F_{H\nu_H}-F_h v_h)=\frac{B\omega R}{30}\left[H\cos\alpha-\frac{(H-h_\gamma)(\sqrt{R\cdot h}-\sqrt{R\cdot h_\gamma})}{R(\alpha-\gamma)}-h-\frac{(h_\gamma-h)\sqrt{R\cdot h}}{R}\right] \text{ and } \frac{F_{H\nu_H}}{F_h v_h}$$

$$=1-\frac{H}{h_\gamma}\cdot\frac{\Delta h}{D}$$

AUTHOR: HU Xiaeng [5170 6932 1073]

ORG: Northeast Institute of Heavy Machinery

TITLE: "Determination of the Length of the Contact Arc in Cold Rolling and Calculation of the Rolling Force"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 1, 1981 pp 35-41

TEXT OF ENGLISH ABSTRACT: Proceeding from the elastic deformation of rolling rolls and strips the author has put forward a simple but accurate formula for calculating the length of the contact arc. On this basis a calculation method-diagrammatic method and analytic method (simplified formula) for rolling force is further advanced. The above-mentioned formula provides not only convenient conditions for general engineering computation, but also gives rather practical results. In addition, it also provides a simple but more accurate mathematical model of the rolling force for electronic computer control. It will be of practical significance for raising accuracy in predicting rolling force, decreasing computer internal memory occupancy and increasing the on-line calculating speed.

AUTHOR: CHEN Wei [7115 3555]
HUANG Xiaoying [7806 1321 3841]
PAN Tianxi [3382 1131 0823]
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ORG: All of the Central Iron and Steel Research Institute

TITLE: "Effects of the Microstructure of Weld Metal on the Fracture Toughness of 18Ni(250) Maraging Steel"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 1, 1981 pp 42-46

TEXT OF ENGLISH ABSTRACT: The structure of weld metal of 18Ni(250) maraging steel is studied under a transmission electron microscope and by the electron diffraction method. Using diffraction patterns of various crystal zones, the white blocky structure precipitated along the interface of columnar crystals in the microstructure was identified as reverse transformation austenite. It is proved that the heterogeneity of weld structure, especially blocky reverse transformation austenite and dispersive brittle phase at grain boundaries and within the grains are the main causes which bring the fracture toughness of the weld metal lower than that of the parent metals. Methods to improve the toughness of the weld metal are suggested.

AUTHOR: LI Weili [2621 0251 4539]
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ORG: All of the Central Iron and Steel Research Institute

TITLE: "Development of an Electric Steel Containing Phosphorus"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 1, 1981 pp 47-53

TEXT OF ENGLISH ABSTRACT: The required magnetic properties of core materials in the electro-machine making industry are as follows: $B_{25} \geq 1.58$ T, $P_{10/50} \leq 1.8$ W/kg. Such characteristics correspond to those of the cold rolled electric steel containing about 2 percent Si. On the other hand, pure iron (with ~0.2 percent Si, ~0.3 percent Al) with $B_{25} \geq 1.65$ T, $P_{10/50} \leq 2.5$ W/kg can also be used, but such sheets are so soft that the deep drawing property or the ability for stamping is not satisfactory for electro-machine making; i.e., the magnetic properties after stamping become worse and the sheets have to be annealed after stamping in order to relieve the internal stress. In addition, the core loss is rather high. All these prohibit pure iron from practical use. With the addition of some elements in pure iron, the electric resistivity and hardness are greatly increased as well as improving the magnetic properties and the workability. In other words, a new material with the same core loss, but higher magnetic induction, may be obtained.

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Results of our experiments showed that an alloy satisfying the above-mentioned requirements was being developed. Its main composition is P~0.15 percent, Si 1.2~1.4 percent, with the balance being iron. The single cold rolling method can be used if the quantity of the non-metallic inclusions, such as Al_2O_3 and SiO_2, are low enough, or the twice cold rolling method can be used while the inclusions are more than 0.01 percent. The ductile-brittle transition behavior and hardness of this alloy have been tested. The results showed that the workability of this alloy is satisfactory for the manufacturing process. Its core loss is just the same as that of H18, but its magnetic induction is higher and the cost is cheaper.

AUTHOR: SUN Keqin [1327 0344 0530]

ORG: Ironmaking Works of Anshan Iron and Steel Company

TITLE: "A Method for Correcting Errors in Coke Rate and Other Initial Data by Using Different Ways of η_{H_2} Calculation"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 2, 1981 pp 1-6

TEXT OF ENGLISH ABSTRACT: The utilization rate of hydrogen, η_{H_2} in a blast furnace can be calculated by a hydrogen balance. A new method for calculating η_{H_2} has been derived, based on an oxygen balance. Errors in initial data used in these two methods were found to be reflected in different ways. A method has been derived which can be applied to correct the coke rate and other errors in the initial data. Examples of such corrections are given.

AUTHOR: YAN Wei [2518 0251]
GU Fei [7357 7378]

ORG: Both of the Beijing University of Iron and Steel Technology

TITLE: "An Experimental Study on Explosive Properties of Bituminous Coal Powder for Blast Furnace Injection"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 2, 1981 pp 7-12

TEXT OF ENGLISH ABSTRACT: The explosive properties of several kinds of bituminous coal powder have been studied experimentally. The results show that coal powder explosion is related not only to the volatile content of the coal, but also to the particle size or specific surface area of the powder. It is beneficial to widen the size range of the coal powder, but this must be done according to operating conditions of the blast furnace. Keeping the oxygen content of the injection gas below 15 percent, possibly by introducing some N_2 into the gas medium, will prevent coal explosion.

In order to prevent coal powder storage bins from choking, an effective measure is to fluidize the powder by admitting fluidizing air through porous plates in the bins.

AUTHOR: LIU Qingguo [0491 1987 0948]

ORG: Beijing University of Iron and Steel Technology

TITLE: "An Analysis of Bubble Formation Conditions during Ingot Solidification"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 2, 1981 pp 13-19

TEXT OF ENGLISH ABSTRACT: Segregation of impurity elements, reaction between segregation elements and bubble formation during ingot solidification are discussed. In the calculations, the effects of peritectic transformation and surface tension have been taken into consideration. When the sum of the partial pressures of hydrogen, nitrogen and carbon monoxide in equilibrium exceeds the sum of atmospheric pressure and the additional pressure caused by surface tension of the bubbles, bubbles will grow, subskin bubbles may appear, and in extreme cases a swelling of the ingot may occur.

Subskin bubbles and swelling can be avoided either by decreasing hydrogen and nitrogen contents in the molten metal or by intensified deoxidation which would decrease the partial pressure of CO in equilibrium.

AUTHOR: YIN Guojin [3009 0948 3866]

ORG: South-central Mining and Metallurgical Institute

TITLE: "The Distribution of Arsenic in Steel"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 2, 1981 pp 20-28

TEXT OF ENGLISH ABSTRACT: The characteristics of arsenic distribution in steels, high As iron and other alloys have been investigated using the microhardness test and electron probe microanalysis. The tendency of arsenic containing steel toward macro-segregation and dendritic segregation is discussed.

Experimental results show that arsenic decreases the solubility of carbon in ferrite, increases the hardness of ferrite and causes an increase of cementite in low carbon steel. As may form arsenic-containing carbides. The arsenic content in the carbide is lower than that in the ferrite. It appears that arsenic in steel often leads to macro-segregation and dendritic segregation and, as a result, banded structure and anisotropy often occur in the final sheet.

AUTHOR: NA Baokui [6719 1405 7608]

ORG: Central Iron and Steel Research Institute

TITLE: "Optimization of Alloy Steel Composition by Statistical Method"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 2, 1981 pp 29-41

[EXT OF ENGLISH ABSTRACT: Optimization of chemical composition of 0.13 percent C-Ni-Mo-Co steel was carried out using a statistical method to obtain a good combination of strength and toughness. The Box-Wilson method used consists of two steps. In the first step, the direction of changing "factors" toward the goal of a "property" (this is called the "steepest ascent") is found from the regressional equation obtained in experiments designed with an orthogonal array. In the second step, the optimum is explored by investigation of the property along the steepest ascent. In order to optimize "strength" and "toughness" simultaneously, the steepest ascent of "strength-toughness coefficient" was calculated, and the optimum chemical composition obtained along this ascent.

AUTHOR: WANG Xianjin [3769 0341 6651]

ORG: Beijing University of Iron and Steel Technology

TITLE: "On the Interrupted Rolling State and Deformation Model in the Continuous Tube Rolling Process with a Floating Mandrel"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 2, 1981 pp 42-48

[EXT OF ENGLISH ABSTRACT: In the continuous tube rolling process with a floating mandrel, an essential prerequisite is to keep the plastic shell integral and the rolled mandrel intact. It is found that the shell and the mandrel are loaded and unloaded in steps. It has been proved that the characteristic of the mandrel mill is that the rolling process is continuous, but that the rolling state is intermittent. The intermittent rolling state is described through three aspects: "velocity diagram," "forming diagram" and "deformation model."

According to the relative slide between the shell and the mandrel, four general elements which the forces act upon have been summed up and put forward as the basic deformation model for further study of stress and strain in the plastic zone.

AUTHOR: OU Guanghui [2962 0342 6540]

ORG: Design and Research Institute of Nonferrous Metal Working, Ministry of Metallurgical Industry

TITLE: "Determination of the Optimal Diameter of Back-up Rolls for a 4-High Rolling Mill"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 2, 1981 pp 49-52

TEXT OF ENGLISH ABSTRACT: A general trend in designing 4-high rolling mills in many countries is to increase the diameter of back-up rolls to improve the rigidity of the mills. In this paper the relationship between back-up rolls and rigidity of stands is discussed and a new method of determining back-up roll diameter by mathematic analysis is proposed. The results obtained are more accurate than those obtained by empirical formulas recommended in the literature. The author checked the diameter of back-up rolls of the 1700 mm cold strip mill and other mills in the Wuhan Iron and Steel Company by this method, and the new method proved to be more practical.

AUTHOR: DENG Zhisheng [6772 2655 3932]
WANG Degen [3076 1795 2704]

ORG: Both of the Central Iron and Steel Research Institute

TITLE: "The Transition Temperature Curve of the Plane Strain Fracture Toughness of 12CrNi4MoVNbA Steel"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 2, 1981 pp 53-57

TEXT OF ENGLISH ABSTRACT: The curve indicating the relation between yield strength and plane strain fracture toughness and temperature of 12CrNi4MoVNbA steel in static and dynamic states has been determined using the J-integral technique with small specimens. An analysis of the results of the drop-weight test on NDT and the transition temperature curve in fracture toughness of the steel tested shows that it has a similarity to the K_{Ic} and K_{Id} transition temperature curve of A533-B steel as published in the literature. Moreover, with regard to the empirical relationship proposed by Rolfe and Novak in the upper shelf temperature range, the K_{Ic} value calculated from the C_v value of this steel is close to K_{Ic} determined in the present paper.

AUTHOR: SUN Hongzheng [1327 3163 6927]

ORG.: Anshan Research Institute of Thermoenergy in Metallurgy

TITLE: "Prospects of Energy Saving in China's Steel Industry"

SOURCE: Beijing GANGTIE [IRON AND STEEL] in Chinese No 2, 1981 pp 62-68

TEXT OF ENGLISH ABSTRACT: The steel industry of China consumed 75 million tons of equivalent coal in 1979, or 2.18 TEC per ingot-ton steel, which is a very high figure. The high overall energy consumption is shown to be mainly caused by the following conditions:
(1) The auxiliary activities were too extensive, which increased the energy consumption by 15.6 million TEC.
(2) The ratio of iron produced to steel produced was high, increasing the energy consumption by 10.3 million TEC.
(3) The comparable portion of the energy consumption, i.e., that at the metallurgical and rolling mills, was also too high by about 18.6 million TEC. The sum of the above items amounts to 44.5 million TEC.

The following proposals are made to save energy: (1) Reduce the production of foundry pig iron and iron used in steelmaking. About 6.5 million TEC can be saved in this way. (2) Save 8 million TEC by taking appropriate technical measures in steel plants. (3) Save 1 million TEC in the auxiliary industry. A sum of

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15.5 million TEC can thus be saved, enough for the production of about 10.6 million tons more steel. It is estimated that 38.6 million tons of iron, 45 million tons of steel and 32 million tons of rolled products may be produced in the year 1985 without consuming any more energy than in 1979. The proposed energy saving measures are discussed in detail in the article.

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CSO: 4009/217

AUTHOR: WANG Zutang [3769 4371 0781]

ORG: Qinghua University

TITLE: "Optimum Design of Multi-layer Composite Cylinder of Cold Extrusion Dies and High Pressure Containers"

SOURCE: Beijing JIXIE GONGCHENG XUEBAO [CHINESE JOURNAL OF MECHANICAL ENGINEERING] in Chinese Vol 17 No 1, 15 Mar 81 pp 1-13

TEXT OF ENGLISH ABSTRACT: A method of optimum design of multi-layer composite cylinder of cold extrusion dies and high pressure containers has been developed. Optimum design refers to two cases: (1) tensile hoop stress on inner face core under allowable working pressure and (2) without tensile hoop stress. Equations calculating layer thickness and diametrial interference are derived.

AUTHOR: LING Zhiguang [5677 1807 0342]

ORG: Institute of Thermophysical Engineering, Chinese Academy of Sciences

TITLE: "One-dimensional Analysis of Transonic Turbine"

SOURCE: Beijing JIXIE GONGCHENG XUEBAO [CHINESE JOURNAL OF MECHANICAL ENGINEERING] in Chinese Vol 17 No 1, 15 Mar 81 pp 14-25

TEXT OF ENGLISH ABSTRACT: In accordance with the flow characteristics and possible projects of the transonic turbine, the one-dimensional fundamental relations are derived and parametric analysis has been made in detail. The concept of "transonic velocity ratio" Ω is introduced by considering the choking characteristics and is used to correlate the calculated results and to obtain the optimal values. The relation between the turbine regime and its geometric and acrodynamic parameters is also analyzed, and some recommendations are given for the proper selection of the design parameters of the transonic turbine.

AUTHOR: None

ORG: Research Department of Machine Tools Laboratory of Metal Grinding, Northeast Institute of Technology

TITLE: "Experiments and Research on Technology and Mechanisms of Creep Feed Grinding"

SOURCE: Beijing JIXIE GONGCHENG XUEBAO [CHINESE JOURNAL OF MECHANICAL ENGINEERING] in Chinese Vol 17 No 1, 15 Mar 81 pp 26-36

TEXT OF ENGLISH ABSTRACT: This paper describes the features of creep feed grinding. Creep feed grinding is a new surface grinding process with low feed rates, large wheel cutting depth and, therefore, high stock removal rates, which are normally 100 to 1000 times greater than those by conventional grinding processes. It can successfully be applied to profile or straight grinding and can grind to full depth in one or several passes, thus eliminating the need for premachining, such as milling, planning, etc.

This paper introduces the grinding machine, grinding wheel, diamond roll, coolant application, technology and mechanisms for creep feed grinding blade roots of a 23,000 kilowatt gas turbine.

One of the main problems of creep feed grinding is that it causes buring and cracking over a wide range. Therefore, the chip formation mechanism on creep feed

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grinding is also described in this paper. The experimental results show that the temperature of the workpiece rises suddenly from 100~130°C to 1000°C, and higher during burning. Moreover, correct selection of the grinding wheel, feed rates and coolant application can control the consistency of the surface finish, shape and tolerance of the workpieces.

AUTHOR: DAI Depei [2071 1795 3099]
YANG Yanchi [2799 1693 4654]
HUANG Xieqing [7806 0588 3237]
GU Chongxian [7357 1504 6902]

ORG: All of Xian Jiaotong University

TITLE: "A New Concept in Cutting Marks Formation in Metal Cutting Vibration"

SOURCE: Beijing JIXIE GONGCHENG XUEBAO [CHINESE JOURNAL OF MECHANICAL ENGINEERING] in Chinese Vol 17 No 1, 15 Mar 81 pp 37-49

TEXT OF ENGLISH ABSTRACT: In conventional theory, the mechanism of cutting marks formation in metal cutting vibration has been treated as a simple reproduction of tool-work vibration. However, such theory may mislead researchers into wrong conclusions and thus create confusion. In this article a new concept is introduced which deals, we think, more adequately with this problem than does the conventional theory.

AUTHOR: XIN Xiaokang [1823 1321 1660]
ZHU Shican [2612 1102 3605]

ORG: Both of Fudan University

TITLE: "A Computational Method for Three-dimensional Flow in Radial Flow Compressor's Impeller with Splitter Blades"

SOURCE: Beijing JIXIE GONGCHENG XUEBAO [CHINESE JOURNAL OF MECHANICAL ENGINEERING] in Chinese Vol 17 No 1, 15 Mar 81 pp 50-61

TEXT OF ENGLISH ABSTRACT: This paper presents a computational method for three-dimensional flow in radial flow compressor's impeller with splitter blades. The S_2-surface through the leading edge of the splitter blade and the flow rate through channels between this S_2-surface and long blades are determined automatically by iteration.

Numerical examples show that the streamlined position and the relative M number distribution may be obtained with rather good convergency by this method. When the splitter blade is slightly near the mid-surface between the two long blades, the flow field is better.

AUTHOR: None

ORG: Fracture Research Group, Institute of Metal Research, Chinese Academy of Sciences; Metal Laboratory, Bureau of Technique Improvement, Northeast China; Metal Laboratory, Fuxin Power Station

TITLE: "Fracture Analysis of the Steam Turbine Disc Made of $34CrNi_3Mo$ Steel"

SOURCE: Beijing JIXIE GONGCHENG XUEBAO [CHINESE JOURNAL OF MECHANICAL ENGINEERING] in Chinese Vol 17 No 1, 15 Mar 81 pp 62-73

TEXT OF ENGLISH ABSTRACT: In this paper we have analyzed the cracking cause of the steam turbine disc made of $34CrNi_3Mo$ steel and suggested that it may be related to stress corrosion cracking. The fracture toughness K_{1c} at room temperature and J_{1c} at both room and service temperature of the disc was determined respectively with large CT specimens and small three-point bending specimens. The stress corrosion cracking propagation rates da/dt were also measured. The stress intensity factor at the disc crack tip was approximately calculated by using stress superposition theorem. Consequently, the critical crack length and residual service life were evaluated.

AUTHOR: ZHU Hengsheng [2612 1854 3932]

ORG: Dalian Railroad College

TITLE: "The Second Conjugate Curve of a Plane Tooth-profile and Its Application to the Engagement of Cycloidal Gears"

SOURCE: Beijing JIXIE GONGCHENG XUEBAO [CHINESE JOURNAL OF MECHANICAL ENGINEERING] in Chinese Vol 17 No 1, 15 Mar 81 pp 74-80

TEXT OF ENGLISH ABSTRACT: According to the principle of double-enveloping, the author points out that a plane tooth-profile has "two" conjugate curves and derives a general equation for the second conjugate curve.

The author also proposes a new method for the calculation of the engagement of cycloidal gears whose rolling circles coincide with the pitch circles of the conjugate gears. The main points of the method are: the first conjugate curve degenerates into a point, the tooth-profile of the conjugate gear is therefore determined by the second conjugate curve. A simple equation for determining conjugate tooth-profiles and two examples using this equation are given in this paper.

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TITLE: "On a Method of Solving the Indirect Position Problems of Manipulators"

SOURCE: Beijing JIXIE GONGCHENG XUEBAO [CHINESE JOURNAL OF MECHANICAL ENGINEERING] in Chinese Vol 17 No 1, 15 Mar 81 pp 81-88

TEXT OF ENGLISH ABSTRACT: The present paper deals with the indirect position problems of manipulators. This paper extends the use of identity conditions for motions of closed-loop mechanisms and suggests a rather simplified method of solving the indirect position problems of manipulators. In order to illustrate this method, RRPRR and 6R manipulators are gives as examples.

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TITLE: "Several Problems Concerning the Built-up Nose in Metal Cutting"

SOURCE: Beijing JIXIE GONGCHENG XUEBAO [CHINESE JOURNAL OF MECHANICAL ENGINEERING] in Chinese Vol 17 No 1, 15 Mar 81 pp 89-100

TEXT OF ENGLISH ABSTRACT: Based on the test data, the effect of the built-up nose on the cutting force and temperature and the frequency of the built-up nose in the forming and tearing process are discussed in this paper. The connection of the built-up nose to the phenomenon of flakes in the surface of the work-piece is particularly analyzed.

Through testing it is noted that the formation of the built-up nose results in the decrease of cutting force and temperature, but the former effect is larger. It is also noted that the frequency of the built-up nose in the forming and tearing process is high enough. The tearing of the large part of the built-up nose reaches 30~120 C/S.

It is considered that the built-up nose is closely connected with the phenomenon of flakes in the surface of the work-piece. The process of the forming of flakes is discussed. The metal in the low layer of the chip, producing serious stagnation,

[Continuation of JIXIE GONGCHENG XUEBAO Vol 17 No 1, 15 Mar 81 pp 89-100]

is regarded as the procedent condition. The built-up nose is the most serious stagnation, and in this case the phenomenon of the flakes is also obvious. To avoid the flakes, the built-up nose should be eliminated. The author found that in the condition of the forming of a discontinuous-type chip there also obviously exists the phenomenon of stagnation, and even the built-up nose was found. Thus the author considers that in all cases of the forming of discontinuous and continuous-type chips the cause of the forming of flakes has no distinction in principle. Hence the author throws doubt upon this point of view in which the flake is regarded as a particular phenomenon independent of the built-up nose.

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TITLE: "Dongfanghong No 14 Ship Engine Room Central Control Apparatus"

SOURCE: Shanghai CHUANBO GONGCHENG [SHIP ENGINEERING] in Chinese No 3, 1 May 81 pp 38-43

ABSTRACT: Dongfanghong No 14 motorship is a large cargo ship of the Hankou-Shanghai Line. Its main engine is composed of 2 diesel engines of the Chinese make 12VEDZ 30/55 type, with 2250 hp each. It is equipped with an electrical remote control device made by Shanghai Electrical Instrument Plant for remote control driving. On the basis of the original set-up, the authors added some automated features to realize automatic pressure, temperature, and fluid level regulation, automatic control of the fuel system, the rudder water, etc. The main engines are equipped with semi-automatic lubrication and a lubricant pump with an automatic starting device. Indicating lights, meters, warning lights, and various switches are added to the control panel so that one operator can monitor the operating condition of the engines and the various technical parameters in the engine room. The central control room and the control panel, the monitoring and warning system, the automated electrical power station, and various items of automation are briefly introduced.

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ORG: None

TITLE: "Analysis of Combat Strength of Large Deck Cruiser and Calculation of Major Parameters of the Ship"

SOURCE: Shanghai CHUANBO GONGCHENG [SHIP ENGINEERING] in Chinese No 3, 1 May 81 pp 61-65

ABSTRACT: Modern combat on the sea is primarily in the form of long distance fighting with airplanes and missiles, and the most effective is offensive attack with missile-carrying airplanes launched from the deck of a ship against the ships of the enemy. This is the reason for the appearance of the large deck cruisers, which are also called V/STOL aircraft carriers. These are not as expensive to construct as regular aircraft carriers and also have higher mobility. Using the 2 types of large deck cruisers, the Kiev of the USSR and the Invincible of England, completed in May 1975 and March 1980 respectively, this paper analyzes, briefly, the combat strength of this type of cruisers, and calculates such major parameters as displacement, maximum propulsion of their airplanes, maximum number of airplanes on the ship, etc.

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